S P E C I F I C A T I O N S

FOR

B U I L D I N G

FOR

FORTSON - BENTLEY - GRIFFIN

ATHENS, GEORGIA

1974

J. G. Beacham, Engineer for Fortson-Bentley-Griffin

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FORTSON-BENTLEY-GRIFFIN

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I. INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS:

Fortson-Bentley-Griffin of Athens, Georgia (herein called the Owner) invites bids on the attached forms hereto, all blanks of which must be filled in. Bids will be received by the Owner at its offices in the Southern Mutual Building

until _____ P. M., D. S. T., on _____ 1974; and immediately after receiving bids they will be opened in the presence of the bidders. The envelopes containing the bids must be sealed by the bidder before it is presented to the Owner and designated as Proposal for the Construction of an Office Building to be located at the southeast intersection of Dougherty Street and College Avenue.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive technicalities and informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 30 days after the actual date of the opening thereof.

2. PREPARATION OF BID:

Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to Fortson-Bentley-Griffin, Southern Mutual Building, Athens, Georgia 30601.

3. SUBCONTRACTS:

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Owner.

4. QUALIFICATIONS OF BIDDER:

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

Bidder must deposit the sum of $50.00 for each set of plans and specifications received. Said amount will be refunded at the time same plans ans specifications are returned in good condition.

5. BID SECURITY:

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5% of the bid. Such cash, checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining cash, checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within 30 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT:

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within 10 days after he has received notice of the acceptance of his bid,

shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES:

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within _____ consecutive calendar days thereafter. Bidder must agree also to pay as liquidated damges, the sum of $50.00/day for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

8. CONDITIONS OF WORK:

Each bidder must inform himself fully of the conditions relating to the project. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

9. No interpretation of the meaning of the plans, specifications or other prebid documents will be made to any bidder orally.

Every request for such interpretation should be in writing addressed to the Engineer J. G. Beacham, Athens, Georgia, and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes), not later than three days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become a part of the contract documents.

10. SECURITY FOR FAITHFUL PERFORMANCE:

Simultaneously with his delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as

security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner.

11. POWER OF ATTORNEY:

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. NOTICE OF SPECIAL CONDITIONS:

Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

(a) Inspection and testing of materials.
(b) Insurance requirements.
(c) Stated allowances.

13. LAWS AND REGULATIONS:

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

14. OBLIGATION OF BIDDER:

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his bid.

II. GENERAL CONDITIONS

1. CONTRACT AND CONTRACT DOCUMENTS:

The Plans, Drawings, Specifications, Contract Documents, and Addenda, hereinafter enumerated shall form a part of this contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth.

2. DEFINITIONS:

The following terms as used in this contract are respectively defined as follows:

(a) "Contractor": A person, firm or corporation with whom the contract is made by the Owner.

(b) "Subcontractor": A person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with the Contractor.

(c) "Work on (at) the project": Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any subcontractor.

(d) "Project Officer": Shall mean J. G. Beacham, Athens, Georgia.

3. MATERIALS, SERVICES AND FACILITIES:

(a) It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of very nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

(b) Any work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to the Owner.

4. CONTRACTOR'S TITLE TO MATERIALS:

No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims or encumbrances.

5. INSPECTION AND TESTING OF MATERIALS:

(a) All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. The Owner will pay for all laboratory inspection service direct, and not as a part of the contract.

(b) Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

6. "OR EQUAL" CLAUSE:

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's or vendor's names, trade names, catalog numbers, etc., it is intended merely to establish a standard; and, any material, article or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design, will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

7. PATENTS:

(a) The Contractor shall hold and save the Owner and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the Owner.

(b) If the Contractor uses any design, device or materials covered by letters, patent or copyright, it is mutually agreed and understood that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device, or materials, in any way involved in the work. The Contractor and/or his Sureties shall indemnify and save harmless the Owner of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract, and shall indemnify the Owner for any cost, express or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

8. SURVEYS, PERMITS, AND REGULATIONS:

The Contractor shall procure and pay for all permits, licenses and approvals necessary for the execution of this contract.

The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to the performance of the work, the protection of adjacent property, and the maintenance of passageways, guard fences or other protective facilities.

9. CONTRACTOR'S OBLIGATIONS:

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this contract, within the time herein specified, in accordance with the provisions of this contract and said specifications and in accordance with the plans and drawings, covered by this contract and any and all supplemental plans and drawings, and in accordance with thedirections of the Engineer as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the contract and specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Engineer and the Owner.

10. WEATHER CONDITIONS:

In the event of temporary suspension of work, or during inclement weather, or whenever the Engineer shall direct, the Contractor will, and will cause his subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors so to protect his work, such materials shall be removed and replaced at the expense of the Contractor.

11. PROTECTION OF WORK AND PROPERTY - EMERGENCY:

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property, from damage. The Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the contract or by the Owner, or his duly authorized representative.

In case of an emergency which threatens loss or injury of property and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Engineer, in a diligent manner. He shall notify the Engineer immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Engineer for approval or disapproval.

Where the Contractor has not taken action but has notified the Engineer of any emergency threatening injury to persons or damage to the work or any adjoining property, he shall act as instructed or authorized by the Engineer.

The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 14 of the General Conditions.

12. REPORTS, RECORDS AND DATA:

The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract.

13. SUPERINTENDENCE BY CONTRACTOR:

At the site of the work the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Engineer and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

14. CHANGES IN WORK:

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:

(a) Unit bid prices previously approved.

(b) An agreed lump sum.

(c) The actual cost of:

1. Labor, including foremen;
2. Materials entering permanently into the work;
3. The ownership or rental cost of construction plant and equipment during the time of use on the extra work;
4. Power and consumable supplies for the operation of power equipment;
5. Insurance;
6. Social Security and old age and unemployment contributions.

To the cost under (c) there shall be added a fixed fee to be agreed upon but not to exceed fifteen percent (15%) of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES:

It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are ESSENTIAL CONDITIONS of this contract; and it is further mutually understood and agreed

that the work embraced in this contract shall be commenced on a date to be specified in the "Notice to Proceed".

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay to the Owner the amount specified in the condract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner, provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

(a) To unforeseeable cause beyond the control, and without the fault or negligence of the Contractor, including,

but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and

(b) To any delays of subcontractors or supplies occasioned by any of the causes specified in subsection (a) of this article:

Provided, further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

16. CORRECTION OF WORK:

All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Engineer who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture, and methods of construction for the purposes for which they are used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the Engineer, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of the Engineer shall be equitable.

17. CLAIMS FOR EXTRA COSTS:

No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Engineer approved by the Owner, as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. When work is performed under the terms of subparagraph 14 (c) of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers

covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.

18. RIGHT OF OWNER TO TERMINATE CONTRACT:

In the event that any of the provisions of this contract are violated by the Contractor, or by any of his subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the contract, such notices to contain the reasons for such intention to terminate the contract, and unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the right to take over and perform the contract; Provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the Owner may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned the Owner thereby, and in such event the Owner make take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefor.

19. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES:

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The Contractor shall also furnish on forms to be supplies by the Contractor (a) a detailed estimate giving a complete breakdown of the contract price and (b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

20. PAYMENTS TO CONTRACTOR:

(a) Not later than the 15th day of each calendar month the owner shall make progress payment to Contractor on basis of duly certified and approved estimate of work performed during the

preceding calendar month under this contract, but to insure the proper performance of this contract, the Owner shall retain ten percent (10%) of the amount of each estimate until final completion and acceptance of all work covered by this contract: Provided, that the Contractor shall submit his estimate not later than the first day of the month; Provided, further, that the Owner at any time after fifty percent (50%) of the work has been completed, if it finds that satisfactory progress is being made, may make any of the remaining progress payments in full.

(b) In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.

(c) All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.

(d) Owner's Right to Withhold Certain Amounts and Make Application Thereof: The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the Contractor fails so to do, then the Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner, shall be considered as a payment made under the contract by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payment made in good faith.

21. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE:

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligations under this contract or the Performance and Payment Bond.

22. PAYMENTS BY CONTRACTOR:

The Contractor shall pay (a) for all transportation and utility services not later than the 20th day of the calendar month following that in which services are rendered, (b) for all materials, tools, and other expendable equipment to the extent of ninety percent (90%) of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at the site of the project, and the balance of the cost thereof not later than the 30th day following the completion of that part of the work in or on which such materials, tools, and equipment are incorporated or used, and (c) to each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors to the extent of each subcontractor's interest therein.

23. INSURANCE:

The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been so obtained and approved.

(a) Compensation Insurance: The Contractor shall procure and shall maintain during the life of this contract Workmen's Compensation Insurance as required by applicable State law for all of his employees to be engaged in work at the site of the project under this contract and, in the case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.

(b) Contractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall procure and shall maintain during the life of this contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability Insurance in an amount not less than $200,000 for injuries, including accidental death to any one person and subject to the same limit for each person, in an amount of not less than $500,000, on account of one accident and Contractor's Property Damage Insurance in an amount not less than $100,000 per accident and $200,000 aggregate.

(c) Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall either (1) require each of his subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public

Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amount specified in subparagraph (b) hereof, or (2) insure the activities of his subcontractors in his policy, specified in subparagraph (b) hereof.

(d) Scope of Insurance and Special Hazards: The insurance required under subparagraphs (b) and (c) hereof shall provide adequate protection for the Contractor and his subcontractors, respectively, against damage claims which may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him.

(e) Builder's Risk Insurance (Fire and Extended Coverage): Until the project is completed and accepted by the Owner, the Contractor is required to maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portion of the project for the benefit of the Owner, the Contractor, and subcontractors as their interests may appear.

(f) Proof of Carriage of Insurance: The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be cancelled or materially altered, except after ten (10) days written notice has been received by the Owner."

24. CONTRACT SECURITY:

The Contractor shall furnish a performance bond in an amount of at least equal to one hundred percent (100%) of the contract prices as security for the faithful performance of this contract and also a payment bond in an amount not less than fifty percent (50%) of the contract price or in a penal sum not less than that prescribed by State or local law, as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. The performance bond and the payment bond will be in separate instruments.

25. ADDITIONAL OR SUBSTITUTE BOND:

If at any time the Owner for justifiable cause shall be or become dissatisfied with any surety or sureties then upon the Performance or Payment Bonds, the Contractor shall within five (5) days after notice from the Owner so to do, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable bond to the Owner.

26. ASSIGNMENTS:

The Contractor shall not assign the whole or any part of this contract or any moneys due or to become due hereunder without written consent of the Owner. In case the Contractor assigns all or any part of any moneys due

or to become due under this contract, the instrument of assignments shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this contract.

27. MUTUAL RESPONSIBILITY OF CONTRACTORS:

If, through acts of neglect on the part of the Contractor, any other Contractor or any subcontractor shall suffer loss or damage on the work, the Contractor agrees to settle with such other Contractor or subcontractor by agreement or arbitration if such other Contractor or subcontractors will so settle. If such other Contractor or subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

28. SEPARATE CONTRACTS:

The Contractor shall coordinate his operations with those of other Contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including his subcontractors, shall keep informed of the progress and the detail work of other Contractors and shall notify the Project Officer immediately of lack of progress or defective workmanship on the part of other Contractors. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with his own work.

29. SUBCONTRACTING:

(a) The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

(b) The Contractor shall not award any work to any subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require.

(c) The Contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

(d) The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Condidions and other contract documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provisions of the Contract Documents.

(e) Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.

30. PROJECT OFFICER'S AUTHORITY:

The Project Officer shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The Project Officer shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Project Officer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or specifications, the determination or decision of the Project Officer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.

The Project Officer shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this contract and other Contractors performing work for the Owner shall be adjusted and determined by the Project Officer.

31. USE OF PREMISES AND REMOVAL OF DEBRIS:

The Contractor expressly undertakes at his own expense:

(a) to take every precaution against injuries to persons or damage to property;

(b) to store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other Contractors;

(c) to place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work;

(d) to clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;

(e) before final payment to remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition;

(f) to effect all cutting, fitting or patching of his work required to make the same to conform to the plans and specifications and not to cut or otherwise alter the work of any other Contractor.

32. GENERAL GUARANTY:

Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for the damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness.

33. CONFLICTING CONDITIONS:

Any provisions in any of the Contract Documents which may be in conflict or inconsistent with any of the paragraphs in these General Conditions shall be void to the extent of such conflict or inconsistency.

34. NOTICE AND SERVICE THEREOF:

Any notice to any Contractor from the Owner relative to any part of this contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the said Contractor at his last given address, or delivered in person to said Contractor or his authorized representative on the work.

35. PROVISIONS REQUIRED BY LAW DEEMED INSERTED:

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

36. PROTECTION OF LIVES AND HEALTH:

In order to protect the lives and health of his employees under the contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the contract. He alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance or operation.

37. SUSPENSION OF WORK:

Should the Owner be prevented or enjoined from proceeding with work either before or after the start of construction by reason of any litigation or other reason beyond the control of the Owner, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

III. DETAIL SPECIFICATIONS

1. OMISSIONS:

These specifications concomitant with the drawings are intended to provide for the completion of the building, complete in every detail. Anything shown on the drawings but not mentioned in the specfications, or vice versa, or anything not expressly set forth in either, but is reasonably implied, shall be furnished as though specifically shown and/or mentioned in both, without extra charge. Should anything be omitted from the drawings necessary for the work herein described, it shall be the duty of the bidder to so notify the Engineer or the Project Manager before submitting the bid or signing the contract, and in the event the Contractor or bidder fails to give such notice, he shall make good any damage or defect in his work caused thereby without extra charge.

2. STAKING OUT:

The Contractor shall accurately stake out the building using an Engineer's transit to conform to the location as indicated on the plot plan. Install substantial batter boards to accurately preserve the line dimensions and floor elevation of the structure.

3. EXCAVATION:

Particular attention is called to the fact that the sanitary sewer grade is critical and has been a determining factor in establishing the elevation of the first floor. It is the plan that the successful bidder hereinafter referred to as the Contractor, with his plumbing subcontractor working with the City of Athens, run the sanitary sewer line in accordance with the plans to the basement floor prior to the final determination of the basement floor level to be sure that all the plumbing requirements of the basement floor can be properly served in accordance with the drawings and in compliance with the Plumbing Code of the City of Athens. It is also important

that the drainage pipe to the City storm sewer system be installed so that the water will escape from the basement excavation.

The surplus dirt shall be used to fill the property to the grades shown on the plans and surplus material be hauled away.

Footing excavation shall be in neat vertical rectangular sides to prevent the necessity of form; however, if weather or soil conditions prevent vertical sides for footings and foundations, forms shall be used.

All excavation is unclassified. The foundation exploration study made by David L. Federer and Associates is given herewith to guide you in what you may be expected to find. The basement floor elevation is 731.75 instead of 730.15 as indicated in the Federer report. Raising the basement floor one foot was necessary in order to insure sanitary sewage for the basement. Concomitant with this, the ceiling height of the basement was changed from ten feet to nine feet, and it will also reduce the depth of the elevator shaft by one foot.

The following pages show the Federer report.

Your attention is directed to the alternate method of foundations for the exterior walls: one with block and brick as shown on the original with a corresponding reinforced concrete wall exterior foundation wall. Alternate bids on the two walls will be taken.

SOIL INVESTIGATION
OFFICE BUILDING
COLLEGE AVE. & DOUGHERTY ST.
ATHENS, GEORGIA

DAVID L. FEDERER AND ASSOCIATES, INC.

DAVID L. FEDERER AND ASSOCIATES, INC. - SOIL AND FOUNDATION ENGINEERS
PLEASANT HILL ROAD • ROUTE 1, BOX 107C • DULUTH, GEORGIA 30136 • PHONE: 404-476-5227

December 29, 1972

Fortson-Bentley-Griffin
Southern Mutual Building
Athens, Georgia

SUBJECT: Soil Investigation
Office Building
College Avenue & Dougherty Street
Athens, Georgia

Gentlemen:

In accordance with your authorization, we have completed the soils investigation for the above-subject project and are pleased to submit this report with our foundation recommendations.

GENERAL

The area of investigation is located on the southeast corner of the intersection of College Avenue and Dougherty Street in Athens, Georgia. The site is presently used as a parking lot and is relatively level. Mr. J. G. Beacham indicated a house was once present on the northwest corner of the site. The proposed structure is a three-story office building with underground basement. The basement elevation is 730.75 and an elevator shaft is proposed at the location shown on the boring plan with a bottom elevation of 691.25.

FIELD INVESTIGATION

The field investigation consisted of three (3) soil test borings and five (5) auger probings made at the locations shown on the attached boring location plan. Soil sampling and penetration testing was performed

in accordance with ASTM specification D1586-67. The number of blows required to drive the split-tube sampler each six-inch increment is recorded in the boring logs. The number of hammer blows required to drive the sampler the final foot is the standard penetration resistance; an indicator of the soil strength. Auger refusal is an indication of rock which is not rippable by common means.

Water level observations were made during the boring operations and are noted on the boring logs. The boring elevations shown on the boring logs were interpolated from spot elevations furnished by Mr. Beacham.

SUBSURFACE CONDITIONS

The soils encountered at the site are those anticipated for this geologic region. The surface is covered with a two to seven foot layer of miscellaneous fill material.

The fill material is underlain by soils which are primarily silts and sandy silts. The silts and sandy silts had standard penetration resistances of 38 or greater which classify as soils of hard to very hard consistency. An exception to this was in Boring A-4 which encountered standard penetration resistances of 6 to 10 to a depth of fifteen feet indicating soils of medium to stiff consistency. Numerous rock layers were penetrated during the boring operation. This rock is rippable to the depths of penetration of our drilling program. Bedrock or auger refusal was encountered in Boring A-1 at a depth of 27 feet. In the vicinity of Boring A-1, three other attempts were made to drill and auger refusal was encountered at depths of 5 1/2, 7 and 10 1/2 feet. The drilling tools were stopped by something other than bedrock in these shallow borings. Our knowledge of this area indicates that the obstructions could be the remains of the previous house.

No water table was encountered in any of the borings during the boring operation.

RECOMMENDATIONS

1. We recommend spread footing foundations designed for a bearing capacity of 4,000 psf at elevation 730.75. The footing excavations should be inspected by a soils engineer and deepened if necessary in isolated soft areas as was encountered in Boring A-4.

2. The bedrock was encountered only in Boring A-1 and blasting will not be required for the basement excavation.

3. No water table was encountered during the boring operation and dewatering will not be necessary in the basement excavation.

4. Boring A-1 in the vicinity of the elevator encountered bedrock at a depth of 27' which corresponds to the approximate elevation of 713. Rock coring will be necessary to place the elevator shaft at elevation 691.25, and consideration should be given to other elevator types.

If you have any questions concerning this report, please contact us at your convenience.

Respectfully submitted,

DAVID L. FEDERER & ASSOCIATES, INC.

James E. Ahlberg, Soils Engineer

David L. Federer, P. E.

JEA:DLF/sfp

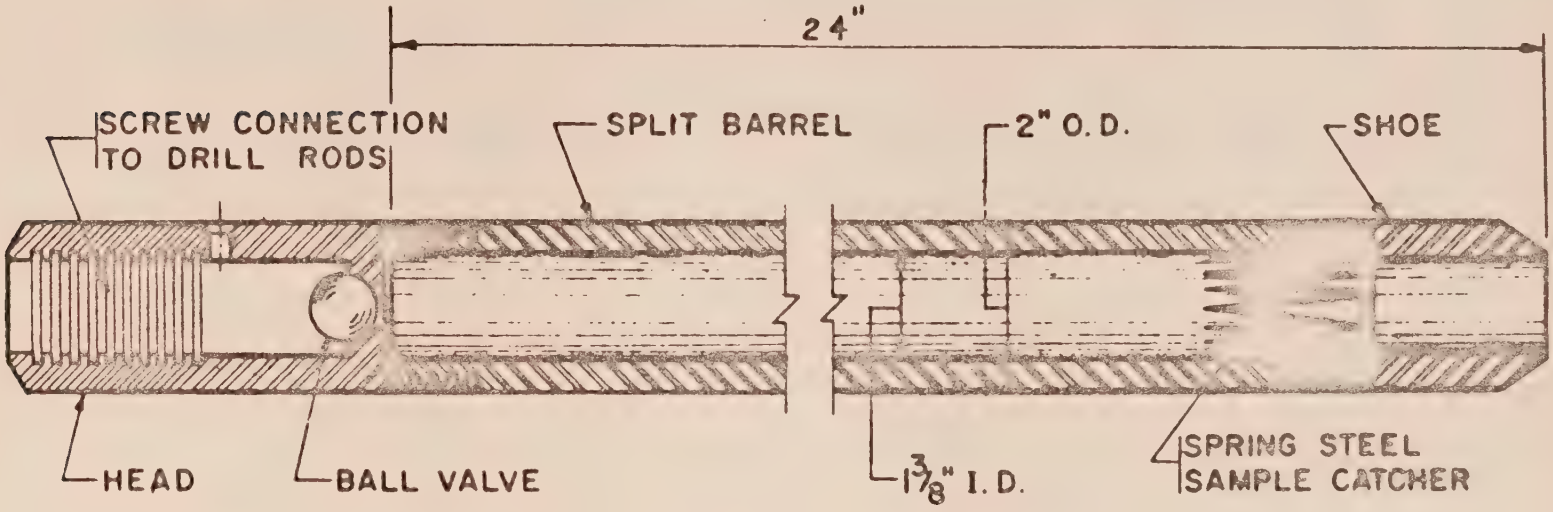
APPENDIX

SAMPLING PROCEDURES

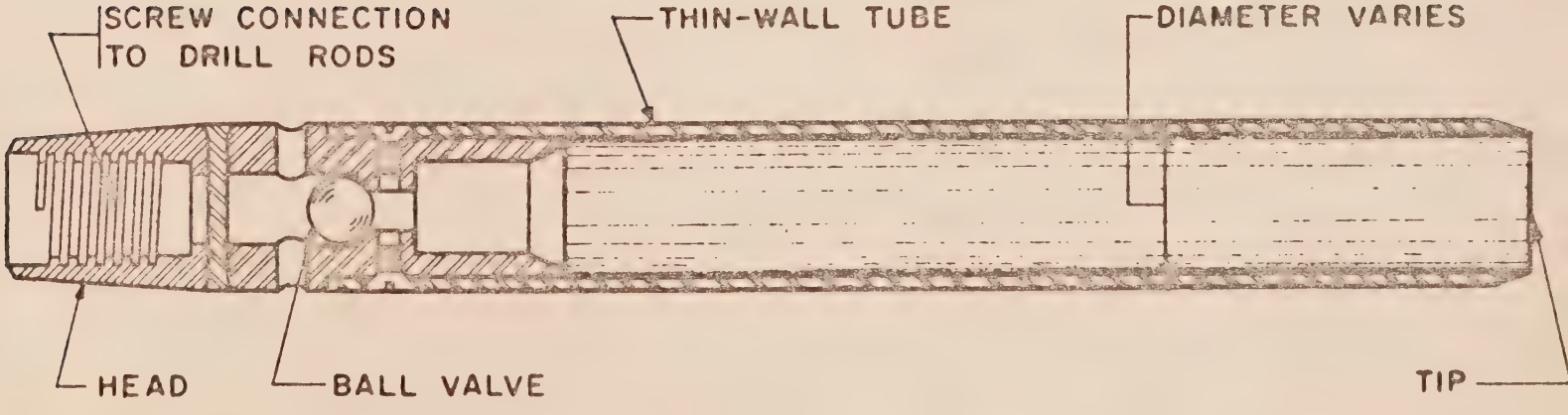
Soil Sampling & Penetration Testing performed in accordance with ASTM D 1587-67.

The Standard Penetration Resistance is the number of blows of a 140 pound hammer falling 30 inches to drive a 2 inch O.D., 1.4 inch I. D. split spoon sampler one foot.

The Undisturbed Sampling Procedure is described by ASTM Specification D 1587-67.



SPLIT SPOON SAMPLE SPOON
(FOR RECOVERY OF BOTTLE SAMPLES)



TUBE SAMPLER
(FOR RECOVERY OF UNDISTURBED SAMPLES)

SOIL CONSISTENCY DESIGNATIONS

(Based on results of Standard Penetration Tests performed according to ASTM Specification D-1586-67)

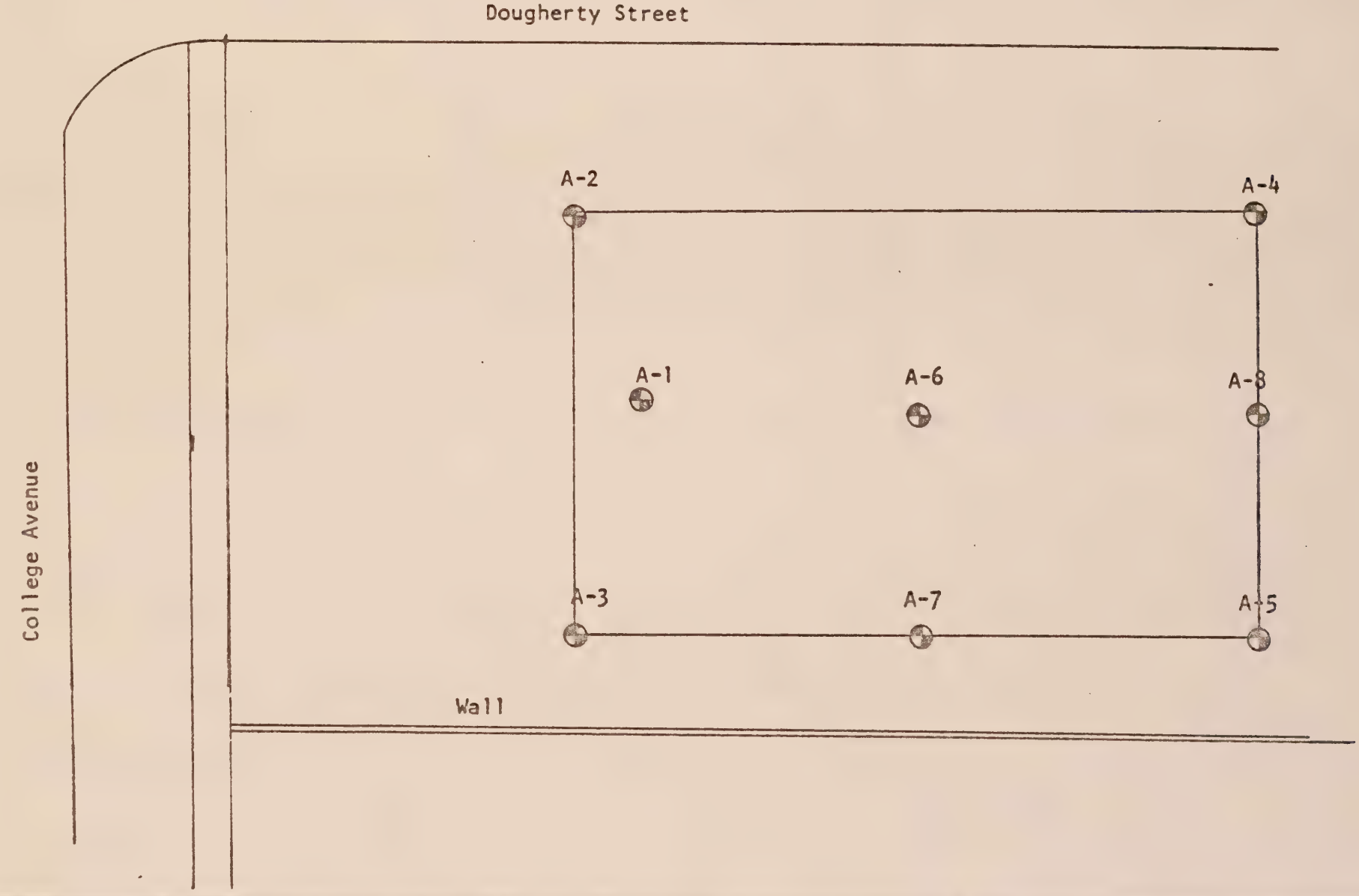
"NUMBER OF BLOWS (N)": Shall be defined as the number of blows of a 140 pound hammer falling free a distance of 30 inches required to drive a standard split spoon sampler (2" O.D. and 1.4" I.D.) one (1) foot.

When the sample is primarily cohesionless, use the following consistency table:

NUMBER OF BLOWS (N)	CONSISTENCY DESIGNATION
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium
31 - 50	Dense
51 or more	Very Dense

When the sample is primarily cohesive, use the following consistency table:

NUMBER OF BLOWS	CONSISTENCY DESIGNATION
0 - 2	Very Soft
3 - 4	Soft
5 - 8	Medium
9 - 15	Stiff
16 - 30	Very Stiff
31 or more	Hard



LEGEND

Scale: 1" = 20'

BORING PLAN

PROJECT

Office Building
College & Dougherty
Athens, Georgia

Job No. 72-230

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-1

PROJECT NAME Office Bldg., College & Doughtery ~~Athens~~ JOB No. 72-230 DATE 12/27/72

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	TYPE	BLOWS/6"		NOTES
741-1				AU			
	Miscellaneous fill						Drilling firm
		5					Drilled through rock
		10					Drilled through rock
	Red micaceous SILT with a trace of sand						
	Brown micaceous sandy SILT with rock fragments	15					
		20					Drilled through rock
		25					
	Auger refusal at 27'	30					No water table encountered

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-2

PROJECT NAME Office Bldg., College & Doughtery Athens JOB No. 72-230 DATE 12/27/72

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	SAMPLES TYPE	SAMPLES BLOWS/6"	NOTES
741±1						
	Miscellaneous fill	5				Drilling medium
	Reddish brown micaceous sandy SILT with rock fragments	10	1	SS	5-16-18	Drilling firm
		15	2	SS	17-14-	
		20	3	SS	12-25/3'	Drilling very firm
	Boring terminated at 21.5'	25				No water table encountered

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-3

PROJECT NAME Office Building-College & Dougherty Athens JOB No. 72-230 DATE 12/27/72

ELEV	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	SAMPLES TYPE	SAMPLES BLOWS/6"	NOTES
741±	1'			AU		
	Miscellaneous fill					Drilling firm
	Red clayey SILT with a trace of sand					
	Reddish brown micaceous SILT with a trace of sand	5				
		10				
	Brown micaceous SILT with a trace of sand					
		15				
		20				
	Boring terminated at 20.0'					No water table encountered
		25				

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-4

PROJECT NAME Office Bldg., College & Doughtery Athens JOB No. 72-230 DATE 12/27/72

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	TYPE	BLOWS/6"	NOTES
741±T				AU		
	Miscellaneous fill					Drilling medium
	Brown micaceous sandy SILT	5				Drilling firm
		10	1	SS	2-3-3	
	Dark brown micaceous sandy SILT	15	2	SS	3-4-6	
	Brown micaceous sandy SILT	20	3	SS	10-25/4'	Drilled through rock No water table encountered
	Boring terminated at 21.5'	25				

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-5

PROJECT NAME Office Bldg., College & Doughtery JOB No. 72-230 DATE 12/27/72

Athens

ELEV	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	TYPE	BLOWS/6"	NOTES
741±1						
	Miscellaneous fill					
	Red micaceous SILT with a trace of clay and sand					
	Brown micaceous sandy SILT with rock fragments	5				
		10	1	SS	18-17-24	Drilling firm
		15	2	SS	15-11-17	
		20				Drilling through rock
	Boring terminated at 20'					No water table encountered

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-6

PROJECT NAME Office Bldg., College & Doughtery JOB No. 72-230 DATE 12/27/72

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	TYPE	BLOWS/6"		NOTES
741±	1			AU			
	Miscellaneous fill						Drilling medium
		5					
	Red micaceous SILT with a trace of sand						Drilling firm
	Reddish brown micaceous SILT with a trace of sand	10					
		15					Drilled through rock
	Brown micaceous SILT with a trace of sand and rock fragments	20					No water table encountered
	Boring terminated at 20.0'						
		25					

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-7

PROJECT NAME Office Bldg., College & Doughtery Athens JOB No. 72-230 DATE 12/27/72

ELEV	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	TYPE	BLOWS/6"		NOTES
741+1				AU			
	Miscellaneous fill						Drilling firm
	Red clayey SILT with a trace of sand						
	Reddish brown micaceous SILT with rock fragments	5					Drilled through rock
							Drilling hard
		10					Drilled through rock
		15					Drilled through rock
		20					
	Boring terminated at 20.0'						No water table encountered
		25					

DAVID L. FEDERER AND ASSOCIATES, INC.

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH Fortson, Bentley & Griffin BORING No. A-8

PROJECT NAME Office Bldg., College & Doughtery Athens JOB No. 72-230 DATE 12/27/72

ELEV	DESCRIPTION	DEPTH IN FEET	SAMPLES NO	TYPE	BLOWS/6"		NOTES
741±1				AU			
	Miscellaneous fill						Drilling firm
	Red micaceous SILT with a trace of sand	5					
	Brown micaceous SILT with a trace of sand	10					Drilled through rock
		15					
		20					
	Boring terminated at 20.0'						No water table encountered
		25					

DAVID L. FEDERER AND ASSOCIATES, INC.

4. CONCRETE:

Concrete for footings and/or foundation to be ready-mix from an approved central mixing plant designed for 3000 pounds strength in 28 days. Cement shall be Type I. In general, the recommendations of the Building Code requirements for reinforced concrete, A.C.I. Standard No. 318-71 shall be adhered to and considered standard procedure for the construction of the building. Contractor, at his own expense, shall make test cylinders and furnish the Engineer a certified test certificate that these strength requirements are met. Test cylinders are to be made in accordance with A.S.T.M.: C39-49.

The ready-mix concrete supplier shall have an approved testing laboratory to prepare the designed mix to indicate a design strength of at least 10% greater than the 3000 pounds per square inch in 28 days. Concrete shall be placed with a 4" slump. Concrete to be consolidated by vibration, spading, rodding in such a manner to avoid segregation.

Contractor shall take the necessary precautions to properly cure concrete after it takes its initial set. Slabs to receive carpet or vinyl tile shall be finished with a steel trowel in a workmanlike manner. Walks, curbs and steps shall have a broom finish.

5. REINFORCING STEEL:

All reinforcing steel shall be new and equal to the "Specifications for Deformed Billet-Steel Bars for Concrete Reinforcement" (ASTM A615). Wire mesh reinforcement shall conform to "Specifications for Welded Wire Fabric for Concrete Reinforcement" (ASTM A185-70) and shall be of sizes as shown on plans. All reinforcing materials stored on site shall be kept 6" off of the ground. All splices in reinforcing bars shall be at least 40 times diameter of the bar being spliced. Contractor to furnish Engineer two sets of shop drawings for reinforcing steel for his approval.

6. VAPOR BARRIER:

Under all concrete floors on the ground shall be protected by one layer polyethylene film lapped not less than six inches and not less than six millioneths (.006) thickness. Film to meet Federal Specifications UUP-147 applied over sand as shown on plans.

7. STRUCTURAL STEEL:

All structural steel shall be ASTM 36 of sizes and weights as shown on plans. All proceedings in its fabrication shall be in accordance with the American Institute of Steel Construction Manual, Seventh Edition. Bolts shall be of sizes and quality shown on plans in accordance with AISC Manual, Seventh Edition.

8. CONCRETE BLOCK:

Concrete masonry units eight inches (8") or thicker shall be load bearing and meet A.S.T.M.C 90 and shall be manufactured from concrete weighing not more than 110 pounds per cubic foot. Blocks shall be steam cured during this manufacture for at least thirty (30) hours, and at time of delivery shall not have morethan thirty percent (30%) moisture content. All block shall be true in size and shape and capable of being cut with a Carborundum or diamond studded saw. Units for interior partitions shall conform to ASTM C129, each unit shall be true and straight and of such nature as will lay a true, plumb and smooth wall of thickness. All special shapes required for starters, jambs, corners, lintels, etc. shall be provided.

For exterior walls every other course of concrete block shall be reinforced and tied with Dur-O-Wall truss design or approved equal truss design. Material shall be nine (9) gage cross rods and nine (9) gage side rods. Cross rods shall be galvanized, all used in accordance with the manufacturer's recommendations. Your attention is called to long wall ties to insure fastening concrete block to steel columns. Where concrete block are left exposed and painted, joints must be neatly tooled.

9. BRICK:

Exterior face brick shall be standard brick sizes laid as shown. Contractor to allow $70.00 per 1000 delivered for bidding purposes for the owner to make his final selection. Copper flashings shall be installed over heads of windows and doors. Weep holes to be left in brick at grade.

10. MORTAR:

Mortar shall consist of one part masonry cement to not more than three parts of loose sand measured by volume. Mortar to comply to A.S.T.M. C270 for Type N mortar. All masonry units to be laid true to line and plumb with joints filled and struck. Brick joints to be tooled in a manner approved by the owner after contractor has laid up a test panel of brick work. Concrete block where exposed, joints to be tooled.

11. INTERIOR PARTITIONS:

Partitions other than concrete block in basement and the thin wall partitions located in the general office area on first and second floor are to be U.S.G. metal framed Drywall in accordance with United States Gypsum 1972-1, 9 Drywall systems. Metal studs to be 3-5/8" spaced 16" on centers with two layers consisting of 1/2" base layer U.S.G. mineral fiber sound deadening board screw attached on each side with 5/8" sheetrock Fire Code C on each side screw attached joints staggered perimeter caulked. Your attention is called to the fact that the partitions are to run from the floor to the bottom of the beams or to the bottom of the floor.

All partitions separating offices from each other and from the general office as well as partitions separating general office from stair tower and or elevator shaft vestibule shall have 2-hour rating. Bottom and top runners of steel studs to be as shown on plans. The purpose of

extending the partitions from floor to bottom of beams above is two fold; namely, to provide a two-hour fire rating and to provide a sound transmission class of 52. Care is to be exercised where any electrical conduit or other piping pierces these partitions above the ceiling that holes for such wires or conduit shall be neatly cut, and the area left after the installation of said wires or conduits shall be efficiently caulked with rock wool. The same applies where any air ducts penetrate said partition walls.

12. DOOR FRAMES:

Door frames to be metal 16-gage. Door bucks as shown on plans.

13. DOORS:

All interior doors not otherwise specified shall be solid core 1-3/4" "Roddis", or equal, wood.

Class B interior doors to be Weyerhaeuser Roddis, 1-3/4" thickness, mineral core wood fire doors, type DFM-90, conforming to the requirements, and bearing the 1½ hour B label of the Underwriters Laboratories. Good grade birch face veneers of sizes as shown on plans. Provide metal frame light openings as indicated, not over 100 square inches.

The two doors from the stair towers opening on ground level to be metal 2-hour doors in metal frames with 10 x 10 glass.

Toilet doors shall be as shown on plans, wood 1-3/8" thick solid core. Bi-fold doors to be 1-1/8" thick louvered as indicated.

Main front doors to be 1-3/4" thick wood as detailed, made of Douglas fir or birch.

14. WINDOWS:

Windows to be Anderson Perma-Shield double hung or equal of sizes shown on plans. Perma Shield Narroline windows to include assembled frame and sash with overhead balances. All weatherstripping applied. Stone finish sash lock and lift applied. Rigid vinyl anchoring flanges furnished. All wood parts to be treated with Anderson, or equal, toxic water repellant. Sash is also toxic treated. Exterior members of frame covered with white rigid vinyl (P.V.C.). Wood sash is to be protected by a 4-step polyurea factory finish process. Interior face of sash clear for stain on paint finish. Glazing to be select quality welded insulating glass thermopane. Perma-Fit grills made of injection moulded vinyl of pattern shown on drawings.

15. BLINDS:

All shutters to have stiles, top and middle rails 2¼" wide, bottom rail 4½" wide. All slots are to be stationary. All blinds to be of clear Ponderosa Pine 1-1/8" thick. All blinds are to be preservative treated. Blinds are to be stationary but before erecting, they must be painted two coats on the side next to brick wall.

16. SECRETARY PARTITIONS:

In the center area of the first and second floors the secretaries' desks shall be enclosed as shown on plans with Adanlock Thinwall Partitions as manufactured by Adanlock Jamestown Corporation, steel series FS-3G with glass or equal. Lower panel 39 inches high with 14 inch glass insert. Owner to select color of panels and the type of glass. Supplier to furnish three sets of drawings for approval. Panel doors to be three feet high.

17. CEILING:

1½ hour U. L. Ceiling to be in all cases suspended using materials as made by U.S.G. or equal. Panels to be 5/8 x 24 x 48" Auratone Fire Code Fissured pattern installed in accordance with manufacturer's specifications. Supporting system may be Donn or equal D.V. 24 main tees four feet on center supported every four feet or less with #12 wire. Cross tees to be Donn D.U. 420 two feet on center. Grid to be white.

18. FIREPROOFING:

Interior columns are to be fireproof as shown on sheet 2. This treatment to run from the floor to the bottom of the beams.

All interior beams supporting floors and roof shall be sprayed with 3/8" Pyrospray as manufactured by Baldwin-Ehret-Hill Company meeting U L # R4609-13.

19. ALLOWANCES:

Contractor or bidder shall allow the following for determining the base bid with the right being reserved by the Owner for adjustment upwards or downward depending on the owner's selection.

Face Brick -	$65.00 per thousand
Carpet -	$9.00 per sq. yd. (36"x36") installed
Paneling -	.40 per sq. ft., material only
Wall covering -	.40 per sq. ft., material only
Vinyl tile 1/8" thick -	.35 per sq. ft., material onl
Hardware -	$1,750.00

20. SAUNA BATH:

Bath to be as manufactured by Viking No. 54, or equal, prefabricated. 10,000 watt, 240 volt A.C., 60 cycle single phase. Height 6'8-3/8" upper bench width 19-3/8" lower bench 35-1/8".

21. ELEVATOR:

Elevator to be hydraulic by Dover Model RP or equal. Color of decor by owner. Capacity 1500 pounds, 100 feet per minute. Car net inside 5'0" x 3'6" as detailed on Dover drawing 81063E dated 1/27/66. Power unit model RA-80-15 with silences and sound insulating couplings motor 15 HP. Contractor to leave a 2'0" square hole in the pit floor for the jack. Fill in after jack has been set.

22. BRONZE EMBLEM:

This emblem is to be mounted flush upon the stucco gable over the porch. It is to be the standard legal emblem like the one mounted at the University Law School Building. It is to be 2 feet eight inches in diameter and be of solid cast bronze.

23. PAVING:

Paving to be 1½" of "E" mix asphalt laid in accordance with State Highway Specifications over a 4" crusher run primed base. On top of the earth shall be sprayed a poison to insure the killing of all seed and grass roots to prevent them from coming up thru the paving.

24. ROOF:

Roof to be 5-ply tar and gravel laid in accordance with manufacturer's specifications to warrant a 20-year roof and flashing bond. Flashing and counter flashing to be 20 oz. copper flashing as shown on sheet 14.

Copper coated flashing shall be installed over the heads of all exterior doors and windows and under the stools of exterior windows.

Downspouts to be 3 x 4, 26-gage copper with copper leaders as indicated.

25. LINTELS:

Lintels over windows and two small exterior doors to be steel 3½ x 3½ x 5/16. Over front door 5 x 3½ x 5/16. Lintels in concrete masonry shall be made by using appropriate lintel blocks and steel rods;under 6 feet use two No. 3 rods, over front door use two No. 4 rods.

26. CONCRETE CURB AND GUTTER:

Curb and gutter to be poured integral 3000 lb. concrete 6" curb and 18" gutter. Top of curb to be set to grade as shown on plans. Gutter and curb to be 6" thick placed with steel forms with vertical face rounded at top and bottom.

27. PAINTING:

The general contractor is cautioned to use only reputable skilled painters who are experienced and capable of producing a first class job. Materials are to be first class applied in accordance with manufacturer's recommendations. The exterior wood work shall be painted three coats on the columns and cornices. They shall be primed as soon as possible after erection all nail holes puttied and sanded between each coat.

All surfaces prior tp painting or staining shall be prepared in what is considered good practice. Inside concrete block that are exposed to have two coats, metal door frames

to be painted two coats to match the paneling and wood doors to be stained to match the paneling. All interior surfaces not covered by paneling, wallpaper or prefinished ceiling are to be painted or stained as the case may be. If Alternate No. 1 as shown on sheet 12, any exposed concrete must be rubbed and painted two coats of cement paint.

IV. PLUMBING

1. SCOPE:

These specifications cover plumbing systems complete. All systems shall be tested, balanced and made ready for full operation.

2. GENERAL:

A. Plans are diagrammatic and show generally the location of piping and accessories, and are not to be scaled for construction measurements. All dimensions shall be verified at the building site.

B. Both the drawings and the specifications shall be considered supplemental to one another, so that materials and labor required by one but not by the other, shall be supplied and installed as though specifically called for by both.

3. ORDINANCES AND PERMITS:

A. The work covered by this division of the specifications shall conform to all ordinances and regulations of local inspection authority and the applicable portions of the applicable plumbing code.

B. The Contractor shall obtain all necessary permits and inspections required for the installation of this work and pay all charges incidental thereto such as meter fees and service fees. The Contractor shall deliver to the Engineer all certificates of said inspections, issues by the authorities having jurisdiction.

C. Ordinances, codes, etc., shall govern as to minimum requirements. Equipment, fixtures, materials, installations, etc. shown in specifications and on drawings in excess of those minimum requirements shall be adhered to by the Contractor.

4. UTILITY CONNECTIONS:

A. The Contractor shall connect to the City sewer and City water piping as shown on the drawings or as required.

B. The Contractor shall visit the job site and acquaint himself with the existing conditions prior to any bidding.

C. All costs incidental to complete utility services, including cutting and patching of street if required, water main connections, line charges, service meter charges and sewer connections shall be included in the bid price.

5. COORDINATION:

Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings, and accessories which may be required. The Contractor shall carefully investigate the structural conditions affecting this work and shall arrange such work accordingly, furnishing required to meet such conditions.

The equipment and piping locations are approximate, and any changes necessary to avoid columns, beams, foundation footings, etc. shall be made at no additional cost to the Owner.

6. WORKMANSHIP:

Poor workmanship shall be sufficient cause for rejection of the work. The City Inspector, Engineer or the Owner shall drfine what is poor workmanship.

7. SHOP DRAWINGS:

Six (6) copies of the proposed catalog data and shop drawings shall be submitted on all items of equipment to be furnished under this specification.

8. EXCAVATION AND BACKFILL:

The necessary excavation and backfill for the installation of the plumbing systems shall be performed under this section of the specifications, in strict accordance with the requirements of the section of these specifications entitled "Excavation Grading and Filling".

The bottom of all pipe trenches in rock or similar very hard strata shall be excavated in a minimum of 6" below the pipe bottoms and refilled with 6" or more of sand or soil tamped in place.

When ditches are excavated in cinders, mud, organic soils, or other injurious materials, those materials shall be excavated a minimum of 6" below the bottom of the pipe line and replaced with inorganic soil, sand or gravel tamped in place.

After pipe lines have been tested, inspected, and approved, the trenches shall be backfilled with inorganic soil. The backfill shall be tamped in 4" layers along the sides of the pipe for one foot above the pipe. The remainder shall be tamped in 6" layers.

9. PIPING MATERIALS AND INSTALLATION:

All piping materials shall be new and unused, and shall be manufactured in the United States. Pipe bushings will not be allowed.

Installation of piping shall be made in a plumb, neat, workmanlike manner. Pipes shall be cut accurately to measurements established at the building site by the contractor, and shall be worked into place without springing or forcing. All drainings shall be graded downward in direction of flow, with a uniform pitch of not less than the code requirements. Vent stacks through the roof shall terminate not less than 8" above the roof, properly flashed and made waterproof.

Reductions in pipe sizes shall be made with reducing tees, reducing ells, or reducing couplings. Copper tubing shall be cut square, mitered joints for elbows, and notching straight runs of pipe for tees will not be permitted. All pipe shall be reamed to remove burrs and metal edges.

Sanitary piping unless otherwise indicated, shall be service weight, cast iron soil pipe of the bell and spigot pattern. The pipe and fittings shall be in accordance with ASTM specification A-74, as amended to date and in accordance with Commercial Standard CS-188-59.

Screwed fittings on drain lines shall be of the drainage pattern, without restricting shoulders inside fittings. Ordinary screwed pipe fittings will not be permitted for drainage. Fittings for dry vent lines shall be in accordance with applicable codes.

Domestic water piping within the building shall be Type M with 50/50 solder joints. Water service pipe under concrete

slab shall be type L soft drawn with no joints under slab, and encased in conduct.

10. PIPE INSULATION:

Insulation shall be as manufactured by Owens-Corning, Gustin-Bacon, Armstrong, or Johns-Manville.

Hot and cold water in walls, chases, and above ceiling shall be insulated with ¼" thick, not less than 3 PCF density, fiberglass pipe covering with factory applied fire retardant vapor barrier jacket held in place with aluminum bands, 18" on centers, with bands at each fitting, outlet, or bend. Bands to be 3/4" wide by .007" thick. Cold water pipe covering shall have joints and of jackets sealed with vapor barrier adhesive and joint sealer strip. Fittings shall be insulated with pipe covering mitered to fit snugly, or with Weber's "Quickeset" hydraulic setting mineral wood cement of the same thickness as the pipe covering and finished with 1/16" thick Nokorode "Sealkote" mineral stabilized asphalt waterproofing compound. Products as manufactured by Vimasco and Foster will be approved.

11. INSTALLATION OF WATER PIPING TO PREVENT FREEZING:

Where water piping is to be installed inside walls, the piping shall be installed on the heated side of the building insulation for added protection against freezing. In addition, pipe insulation shall be ceiling insulation between joists.

12. PIPE JOINTS AND UNIONS:

A. Joints

1. Special joints as manufactured by Tyler Ty-Seal or other mechanical joint will be approved only if acceptable to the local inspection authority and then submitted for the Engineer's approval.

2. Cast iron pipe shall have caulked lead joints with treated rope oakum or asbestos firmly packed and secured with lead, using at least 1 lb. of lead for each in. of pipe diameter.

3. Exterior sanitary sewer pipe shall be cast iron pipe, same type as in (2) above.

4. Copper tubing in walls and inaccessible chases shall be soldered with 95/5 solder.

5. Copper tubing that is accessible may be soldered with 50/50 solder.

5. Joints in brass pipe and fittings shall be screwed joints. The pipe shall be screwed up to shoulder of the fitting, and in all exposed work no threads must show beyond.

B. Unions

1. Unions shall be required for cold water supply and return connections on hot water heater tank.

2. Underground connection between steel and copper piping shall be made with di-electric unions to prevent excessive corrosion.

13. FLASHING:

All piping and vents passing through roof shall be flashed water-tight with six pound lead, using sleeve flashing with base extending at least 12" in each direction beyond the outside diameter of the pipe. Turn sleeve down a minimum of 1½" into top of vent pipe with lead fitting with vandal proof caps as manufactured by Smith Model 1740 or approved equal by Wade, Zurn, Blake or Josam.

Refer to roof drain for lead sheet around each roof drain.

14. FIXTURE CONNECTIONS:

Waste connections to fixtures shall conform to code requirements and shall be as follows:

1. Water closets: Use 4" cast iron stub with metal floor flange. Use preformed wax ring to make joints gas tight. Bolt closets securely to the floor.

2. Lavatories, sinks, drinking fountains and kitchenettes: Type M or Type DWV copperarm with adapter at stack.

3. Urinals: Screw type red brass pipe and fittings.

4. Others: As required by manufacturers recommendations.

Rough-in and final connections shall be made to all plumbing services required by all equipment shown on plans.

15. HANGERS:

Horizontal runs of cast iron piping installed above ground shall be supported near or at each hub, not including fittings at intervals of not more than 5 feet 0 inches. Hangers shall be Grinnell Fig. 260 or Fee and Mason Fig. 239.

Copper piping shall be supported at intervals not to exceed 4 feet 0 inches and at each change in horizontal or vertical direction. Hangers shall be copper strap or other type approved by code for copper pipe. Grinnell Figure 97C.

Hanger rods shall be standard bolt steel with machine screw threads.

16. CLEANOUTS:

Provide cleanouts where shown on drawings or as required by the local code. Types to be provided are as follows:

1. Cleanouts in floor slab shall have round nickel alloy rim and cover, installed flush with finished floor. Cleanouts for cast iron piping shall be as manufactured by Smith Model 4020.

2. Cleanouts in exterior piping shall be brought up to grade as shown on drawings. Cleanouts in cast iron piping shall be as manufactured by Smith Model 4280.

3. Cleanouts in walls shall have stainless steel cover plates and shall be as manufactured by Smith Model 4402. Wall cleanouts shall be same as specified in (2) above.

4. All cleanouts shall be accessible.

5. Approved equal cleanouts as manufactured by Josam, Wade, Zurn or Blake will be acceptable.

17. VALVES AND COCKS:

Unless specifically indicated elsewhere, the valves shall be designed for not less than 125 pound working pressure.

The valves shall have suitable valve body pattern for connection to the pipe for which they will operate. All valves with rising stems shall have back seats for packing under pressure. Approved equal gate valves and check valves as manufactured by Stockham, Walworth, Lunkenheimer, Schott, Hammond or Crane will be acceptable.

Gate valves shall be Hammond Fig. IB634 (Split Wedge) main trunk line.

Cutoff valves underneath lavatories, tank type water closets, kitchenettes, water coolers, and sinks shall be chrome plated angle stop valves with soft annealed chrome plated copper connection pipes and chrome plated escuthcheon plates.

18. TESTS:

The plumbing systems and associated systems shall be subject to constant inspection and final approval of the Engineer and code authorities having jurisdiction. Tests, in addition to these included in this divison, required to show code compliance, shall be performed as directed.

The soil, waste and vent lines of the sanitary systems shall be subjected to a water pressure test of not less than 10 feet of water head pressure for a duration of not less than 2 hours, during the pressure tests, each joint shall be inspected for the underground and concealed lines shall be given the above test and approved before the lines are covered.

The domestic water piping systems shall be subjected to a water pressure test of not less than 150 PSI for a duration of not less than 2 hours. The water piping shall be tested as an entire system, but all underground and concealed lines shall be given the above test and approved before the lines are covered.

19. MAINTENANCE:

All parts of the plumbing fixtures and associated equipment shall be maintained by the contractor throughout the guarantee period. One month after final acceptance of the building by the Owner, the contractor shall go over all the fixtures and test all working parts and put everything in good working order. All fixtures, including traps, shall be thoroughly cleaned and all parts put in good working order. This work is in addition to that involved under the division "Guarantee".

20. GUARANTEE:

All work performed under this division shall be guaranteed to be free of defective materials and workmanship for a period of one year after that final acceptance of the work by the Owner.

Upon notice received from the Owner or Engineer of failure of any part of the guaranteed equipment during the guaranty periods, the effected part or parts shall be promptly replaced with new parts by the contractor at no additional cost to the Owner. All labor required to the complete warranty.

21. ELECTRIC WATER HEATERS:

Water heaters shall be supplied and installed by the plumbing contractor.

The minimum size heater shall be 60 gallon capacity with high recovery heating elements, 4,500 watts lower element and 4,500 watts upper element, with replay device to prevent more than 4,500 watts from being connected at one time.

Relief valve shall be Watts Model IXL or approved equal.

The discharge pipe from the relief valve shall be piped to the outside. This discharge pipe shall be Type "L" soft annealed copper tube.

The following trade names and numbers are used for guide only. Other makes and fixtures may be used if they are equal to the fixtures specified.

WATER CLOSETS

#21-212 Gerber Elongated Water Closet
#50-E Spezel White Seat
#R-1912DL Brasscraft Closet Supply W/Stop

LAVATORIES- WALL HUNG

#K-2861 20x18 Kohler Lavatory
#43-431 Gerber Lavatory Fitting
#R1912A Brasscraft Lavatory Supplies W/Stops
#10-1D 1¼" CS&B Co. P trap

LAVATORIES- COUNTERTOP

#K-2904 19¾ x16¾ Kohler Lavatory
#43-431 Gerber Lavatory Fitting
#R1912A Brasscraft Lavatory Supplies W/Stop
#10-ID ¼" CSUB ES. P Trap

URINALS

#K-4980-T Kohler Urinal
#185yvyB Sloan Royal Flush Valve

JANITOR SINK

#K-6716 22x18 Kohler Service Sink W/s.s. Rim Grard
#K-8905 Kohler Faucet
#K-6673 3" Kohler Trap W/strainer

ELECTRIC WATER COOLER

#WM8A Halsey Taylor Wall Hung Water Cooler
#10-1D 1¼" Cs&B Co. P Trap

SINKS

#78-150-33 25x22 Gerber Stainless Steel Sink
#42-271 Gerber Sink Faucet
#760-SS CS&B Co. Sink Strainer
#R1920A Brasscraft Supplies W/Stops
#14-1 Cs&B Co. P Trap

ELECTRIC WATER HEATER

#KEN66D A.O. Smith Electric 60 gal. Water Heater 4500/4500
#10xL Watts T&P Valve

FLOOR DRAINS

#300-35Ak Josam Floor Drain w/Nikaloy Strainet

V. HEATING, VENTILATING AND AIR CONDITIONING

1. GENERAL REQUIREMENTS

This section and the accompanying drawings cover furnishing all plant, labor, equipment, appliances and materials, and in performing all operations in connection with the installation of a complete air conditioning and heating system. System shall be complete in all respects including all of the incidental items necessary but not specified.

2. ORDINANCES AND PERMITS

The workmanship and materials covered by these specifications shall conform to all ordinances and regulations of the City, State, County and/or other authorities having jurisdiction.

3. EQUIPMENT, MATERIALS, BID BASIS

a. Manufacturer's names, model numbers, as specified herein are for the purpose of describing type, capacity, function, and quality of the equipment and material to be used.

b. Unless "orequal" is specifically stated, bids shall be based on the equipment named in the specifications or on the drawings.

c. Alternate prices may be submitted, showing the amount of deduct to bid, for using equipment by manufacturers other than specified.

d. "Equal product" and "or equal" items listed shall conform to specified base items and shall substantially equal in weight, construction, capacities.

4. INSTALLATION - GENERAL

a. All equipment and materials shall be completely installed, adjusted, complete with all accessories and connections.

b. Piping and equipment shall fit into spaces provided in the building and shall be installed at such times and in such a manner as to avoid damage to the building and as required by the job progress. Contractor shall coordinate work with other trades and locate work covered herein to avoid undue interferences with structural, electrical, architectural work. Equipment, accessories and similar items requiring normal servicing or maintenance shall be easily accessible

c. Contractor shall coordinate work so that structural work is properly installed to accommodate work under this section.

d. Installation shall be in accordance with ASHRAE Guide and manufacturer's recommendations.

5. GUARANTEE

a. Nothing herein contained shall be construed as to relieve the Contractor of the responsibility of making a first-class and workmanlike installation in every respect. Should any defect develop due to faulty workmanship or materials during a period of one(1) year from date of acceptance by the Owner, the Contractor shall replace or repair and make good without additional cost to Owner.

b. Standard manufacturer's guarantees or warrantees in excess of period stated above, shall be secured and delivered to the Owner.

6. EXAMINATION OF PREMISES

a. Before submitting proposal for this work, each bidder will be held to have examined the premises and satisfied himself as to the existing conditions under which he will be obliged to operate, or that will in any manner affect the work under this contract. No allowance will be made subsequently in this connection in behalf of the Contractor for any error or negligence on his part.

7. EQUIPMENT AND MATERIAL PROTECTION

a. During construction all equipment shall be properly protected against damage, defacing, and freezing, by the use of shipping cartons, plastic sheeting, or other appropriate means.

b. All open ends of piping, ducts, equipment, shall be sealed with nipples and caps, plugs, covers, until connection to system is made.

8. FOUNDATIONS, SUPPORTS & SUPPLEMENTARY STEEL

a. All concrete foundations and all supplementary supporting steel, required for equipment shall be furnished and installed under this section.

9. INSTRUCTIONS & DIAGRAMS

a. Contractor shall prepare three(3) instruction manuals covering installation, operation, and maintenance of the equipment and piping system. Manuals shall contain copies of all manufacturer's drawings, pamphlets, data, parts lists, instructions. These neatly bound manuals shall be turned over to the Owner prior to acceptance of the job.

b. Contractor shall provide the services of a skilled technician to instruct the building operator in the proper operation and maintenance of all systems.

10. SHOP DRAWINGS

a. Within four weeks after award of the contract, the Contractor shall submit five(5) copies of shop drawings in brochure form for approval. Each brochure shall contain one copy of all submittal data. Submittals shall include manufacturer's recommendations for install.

b. All literature shall clearly indicate the specified model number, dimensions, arrangement, ratings, and characteristics of the proposed equipment. Capacities and ratings shall be based on conditions indicated or specified herein. Any deviations from specified material or equipment shall be clearly noted in red.

c. Should any equipment furnished by Contractor differ radically from base bid items indicated or specified herein, and which may require added cost to other trades, it shall be the Contractor's responsibility to assume the extra cost involved.

11. ELECTRICAL WORK

a. Except as otherwise specified or noted, electrical equipment shall be as specified herein.

b. Motor controls, system controls, starters, pilot lights, push buttons, etc., shall be furnished by the Contractor complete as a part of the motor or apparatus which it operates. Electrical equipment shall be ordered and wired for the voltage as shown on the Electrical Plans.

c. Motors shall be stantard NEMA continuous duty type. Each motor shall have ample capacity to drive the equipment to which it is connected, at its full load capacity without loading the motor beyond its nameplate rating. All motors shall have overload protection.

d. Starters shall be Allen-Bradley as specified herein. Starters for motors 1/3 HP and smaller shall be manual type AB Bulletin 600; for 1/2 HP and larger, magnetic type, AB Bulletin 709. Starters for motors with remote or automatic control, shall be magnetic type. Relays, interlocks, and auxiliary contacts, shall be provided as specified and required.

e. Motor controls shall be either "Hand-Off-Auto" switches AB Bulletin 800 or "On-Off" push button switches with pilot light. AB Bulletin 800 "Hand-Off-Auto" switches shall be provided for automatically controlled apparatus.

f. Motor starters not an integral part of equipment shall be installed under Electrical. Disconnect switches shall be provided and installed by Electrical Contractor.

g. This Contractor shall provide all system controls , line and low voltage control and interlock wiring. Thermostats shall be furnished to operate the air-conditioning units by the unit manufacturer and will be installed by the Contractor where shown on the plans. Thermostats will be the automatic changeover type for 24 volt operation.

h. All starters, control devices, shall be surface mounted type when installed in concealed areas. Flush mount when in public areas.

i. All starters for three(3) phase equipment shall have overload devices in all three phases.

j. Equal products of Westinghouse, General Electric, Square D, Cutler-Hammer will be acceptable.

12. SYSTEM CONTROL AND ALARM PANEL

a. Contractor shall furnish and install a factory assembled system control and alarm panel by The Singer Company, to:
   (1) Control the means of adding supplemental heat to the closed loop.
   (2) Control the operation of a closed loop evaporative cooler in stages in response to loop water temperatur leaving the cooler.
   (3) Indicate the operating condition of the system water circulating pump and evap cooler sump heater.

(4) Sound alarm to indicate an abnormal operating condition as hereinunder outlined.

b. This panel is to be furnished complete with controls, capillaries and wells, relays, pilot lights, alarm horn, terminal strips, a nine inch scale adjustable angle thermometer and separable well. Power supply to the panel shall be 115/1/60. Contractor shall install wells, flow switch, and thermometer in the main leaving line from the evaporative cooler before filling system. Contractor shall furnish and install all field wiring from control panel to cooler fan and spray pump motor starters, supplemental electric boiler control circuit, flow switch and from starters and sump heater contactor auxiliary contacts to pilot signals on panel.

c. The sequence of operation from this panel shall be as follows:

(1) On a loop temperature fall to 70°F, control shall energize holding coil of the supplemental electric boiler control relay and an amber pilot light shall illuminate. The contacts of this relay shall close the pilot circuit on the supplemental electric boiler. On a loop temperature rise to 73°F, the control shall cut-off the supplemental heat circuit.

(2) On a rise to 83°F, control shall close starter circuit to recirculating spray pump motor and a white pilot light shall illuminate.

(3) On a rise to 85°F, control shall close starter circuit to fan motor on evap cooler and a white pilot light shall illuminate.

(4) On a fall in loop temperature leaving cooler, the sequence shall take place in reverse order at not more than 3°F differential below the above specified operating points.

d. The panel shall contain immersion alarms and capillaries arranged to sense loop temperature and function as follows:

(1) On a fall in loop temperature to 10°F below the supplemental electric boiler set point, sound the alarm horn, illuminate a red pilot light and open all cooler pump and fan motor circuits.

(2) On a rise in loop temperature to 105°F, sound alarm horn and illuminate a red pilot light. Cooler spray pump and fan motor circuits continue to operate.

e. The panel shall contain a terminal strip for connecting the leads from a McDonnel-Miller flow switch. This switch shall be furnished by the panel manufacturer for mounting and wiring by the Contractor as shown on the plans. This flow switch shall be set to sound the alarm, illuminate a red pilot light and open all cooler spray pump and fan motor circuits, on sensing insufficient flow in the main leaving the cooler.

f. The control panel is to be mounted in close proximity to the loop water main leaving the cooler. Manufacturer is to supply all temperature sensing bulbs with 20 foot capillaries and sensor bulb wells shall be copper. An internal wiring diagram and one spare fuse shall be provided and secured within panel enclosure. Manufacturer shall furnish a field wiring diagram as part of the submittal data. Control panel will have sufficient 120V terminal strip contacts to allow connection at any time of a remote repeater panel if so desired by Owner.

g. A one year warranty shall be provided by Contractor for furnishing parts and labor for replacing any part of the control panel which may become defective in normal operation from the date of initial operation.

h. Manufacturer's representative shall check out installation of this panel in the presence of the Contractor and shall verify the settings of controls and alarms as specified.

13. FLEXIBLE CONNECTIONS

a. Provide flexible duct connections to all air conditioning units. Flexible connections shall be 30 oz. Neoprene coated glass fabric. Flexible connections shall not be less than 4" long and shall have metal collar frame at each end. Allow at least 1" slack in fabric to eliminate vibration transmission.

14. INSULATION

a. Supply ducts in the concealed ceiling need not be insulated where a free return is being utilized. Where a ducted return is used, then both supply and return shall be insulated with a minimum 3/4 lb. density glass fiber insulation with .002" aluminum foil flame resistant vapor barrier. Insulation shall be applied with adhesive at one foot intervals and the material shall be further held in place by use of soft annealed wire on 9" centers. Material shall be butted with joints taped.

b. Supply and return plenums shall be lined with 1" thick Owens-Corning 2# density duct liner with Neoprene spray coating. Duct liner shall be applied by adhering the liner in a continuous piece to clean , flat metal sheets with a rubber-base adhesive. Coated sides of duct liner shall face the airstream. All exposed edges shall be pointed and coated with adhesive. Ducts over 18" wide or deep shall have the liner additionally secured with stud welding pins and clips. Where ducts are lined, other types of insulation will not be required.

c. Supply ductwork, for a minimum distance of eight(8) feet from the air-conditioning unit discharge, shall be internally insulated as described above, with duct liner for both insulation and acoustical purposes.

15. LOW VELOCITY DUCT SYSTEM

a. All ductwork shall be fabricated in accordance with the SMACNA Duct Manual.

b. Reference Standards: "Duct Manual" shall mean the current edition of the "Duct Manual and Sheet Metal Construction for Ventilating & Air-Conditioning Systems, Section I, Low Velocity Systems" as published by the Sheet Metal and Air Conditioning Contractors National Association. NFPA-90A shall mean the current edition "Installation of Air Conditioning and Ventilating Systems" as published by the National Fire Protection Association.

c. Fabrication: All ductwork shall be fabricated of galvanized steel in accordance with Table 1 and Plates 5 thru 15A of the "Duct Manual".

d. Hangers: Construct in accordance with Plates 16 thru 20 of the "Duct Manual".

e. Elbows: The radius to be constructed in accordance with Plate 21 of the "Duct Manual". Vaned elbows shall be used where 90 elbows are shown or needed at the unit discharge, and shall be constructed in accordance with Plate 22 of the "Duct Manual".

f. Tee Connections: To be constructed in accordance with Plate 26, Figure B, of the "Duct Manual".

16. FIRE DAMPERS

a. Provide NFPA 90A listed fire dampers where ducts pass thru fire rated walls, floors and rated ceilings as required by NFPA and local code. Provide access door for each damper. Dampers shall bear U.L. label.

17. PIPE, VALVES, AND FITTINGS

a. Unless otherwise noted or specified, pipe, valves, and fittings for the system shall be as specified herein.

b. Shut off valves shall be gate valves, 2" and smaller, and shall be bronze and brass throughout with boxes, nuts, and screwed bonnets, 125# operating pressure, rising stem. Valves shall have back seats for packing under pressure, gland followers and shall be individually tested. Valves shall be Jenkins 47U or 651A for screwed or flanged respectively, and Fig. 1242 for sweat.

c. Globe and check valve construction and sizes shall conform to that given above and shall be Jenkins Fig. 762A, 624, 750, and 613. Shut-off valves 2 1/2" and larger shall be Demco butterfly type with EPT seat and aluminum-bronze disc, with 100 percent shut-off at 125 PSIG, fully field servicable, with lever handle. Check valves 2 1/2" and larger shall be Mission Duo-Check.

d. Strainer shall be McAlear No. 539, bronze screwed 2" and smaller for 300 psig WWP,and cast iron flanged for 2 1/2" and larger for 250 psig WWP. Strainer perforations and materials shall be suitable for installed service. Provide each strainer with nipple and plugged gate valve for blowdown.

e. Welded fittings shall be Taylor Forge, Tube Turns or Midwest fittings of same material and classification as pipe. All welding shall be performed by a qualified welder, in accordance with the standards of the American Welding Society.

f. Supply and return pipe shall be Schedule 40, welded black steel; fittings shall be welded type ASTM-A53-68 for 1 1/2" size and larger, and screwed malleable iron for 1 1/4" and smaller. Elbows shall be long radius type.

g. Provide valves on each side of each major item of equipment, speciality, and elsewhere as required for proper maintenance and repair of system and equipment.

h. Equal products of Walworth, Rockwell, Jenkins, Stockham, Nibco/Scott or Crane will be acceptable.

18. PIPE SUPPORTS AND HANGERS

a. All piping shall be supported by means of hanger rods and pipe hangers from floor or roof construction using supplementary steel and beam clamps.

b. Piping shall be supported from new concrete with Grinnell Fig. 282 inserts, and from existing concrete with Phillips self-drilling expansion shells. Piping and brackets shall be supported from hollow block construction using masonry drilled holes and toggle bolts.

19. DRAIN PIPING SYSTEM

a. Provide all drain piping and fittings from equipment so requiring.

b. Provide drainage lines as indicated or required for various items of equipment, including cooling tower bleed, overflow, and drain; air vent drain; boiler drain. Terminate drains over nearest floor drain.

c. Condensate drain piping from the air-conditioning units shall be Schedule 40 PVC and shall be properly pitched to nearest drain point.

20. GRILLES, REGISTERS, DIFFUSERS, ETC.

a. Provide grilles, registers and diffusers as manufactured by Krueger Manufacturing Company.

b. Ceiling Supply Diffuser (Square): Series 1100,perforated face, with opposed blade volume control. Baked white enamel finish.

c. Sidewall Return Grilles: Series ALS580H, aluminum finish.

d. Ceiling Return Grilles: Series EGC-5, 1/2" x 1/2" egg crate core.

e. Ceiling Exhaust Registers: Series EGC-5, 1/2" x 1/2" egg crate aluminum core and opposed blade volume control.

f. Door Grilles: Series 77-C (core only) of sizes as required to suit door construction. Coordinate with doors. Furnish for installation under General Construction Work.

g. Extractors: Provide Series EX88A for each supply register and diffuser. Shall be adjustable thru grille or duct.

h. Finish shall be of type and color selected by Owner. Representative shall contact Owner and show approved finish on shop drawing submittal.

i. Equal Products: Carnes, Tuttle & Bailey, Barber-Colman, Titus, Metal-Aire, Airguide.

21. PRESSURE GAUGES

a. Pressure gauges shall be bourdon tube type with polished stainless steel case and bayonet ring. Replaceable plexiglass face shall have weatherproof gasket. Pointer shall be adjustable over the entire range. Dial shall be 4 1/2" diameter with red set hand. Accuracy shall be guaranteed to be within 1 percent of the full scale range.

b. Range shall be 0 to 60 PSIG

c. Use Ashcroft 4 1/2" - 1020A or equal as manufactured by Marsh, Weksler, Moeller, Trerice.

22. THERMOMETERS

a. Thermometers shall be solid liquid filled dial type with polished stainless steel case, bayonet ring and stem. Plexiglass window shall have weatherproof gasket. Pointer shall be adjustable over the entire range. Dial shall be 4 1/2" diameter. Stem length, unless otherwise required, shall be 2 1/2". Accuracy shall be guaranteed to be within 1 percent of the full scale range. Thermometers for uninsulated lines shall be equipped with brass separable socket. Range shall be 0 to 250° F temperature. Trerice Type L80742 or equal as manufactured by Marsh, Weksler, Moeller, Ashcroft.

23. EXPANSION TANK

a. Tank shall be American Tube Company liner type, ASME approved and stamped for unfired pressure vessel service, 125 psig working pressure.

24. ELECTRIC UNIT HEATERS

a. Where shown on the plans, provide electric wall type unit heaters, as manufactured by the Singer Company, Series 5900, of capacity shown.

b. Shall be complete with wall box, heating element, automatic thermostatic control, limit switch, fan delay switch, circuit breaker, recessed lock, and U.L. approved.

25. AIR CONDITIONING UNITS

a. Contractor shall furnish and install water source heat pump conditioners where shown on plans, with capacities and characteristics as listed in the schedule. The base bid shall cover equipment as manufactured by The Singer Co

b. Conditioners shall be the ceiling mounted type with horizontal air inlet and discharge, with maximum dimensions as shown on the plans. Casing shall be corner and panel construction with a 14 gauge galvanized steel base pan. Access panels shall be lined internally with acoustic type fiberous glass and shall have the electrical access on one side and the blower & motor access on opposite side. All internal parts subject to water exposure shall be coated with a baked-on thermo-setting plastic.

c. Each corner of the conditioner shall be provided with threaded nut and pin locator hole to accommodate a hanger bracket assembly. The manufacturer shall provide a kit of four hanger brackets, comprised of a heavy steet bracket, integral vibration isolator, cap screw and and plated isolator washer. Hanger bracket assembly shall accommodate a 3/8" maximum diameter hanger rod. No external channel or angle trapeze assemblies under conditioner will be permitted.

d. Conditioner shall contain a sealed refrigerant circuit, consisting of a hermetic motor-compressor, air-to-refrigerant finned tube coil, capillary expansion tube, refrigerant reversing valve pilot operated, water-to-refrigerant coaxial tube exchanger, high pressure and low temperature safety cutouts factory installed on the refrigeration circuit. Cutouts shall be factory wired through a lock-out relay to hold conditioner off until it is reset electrically at the circuit breaker panel regardless of the wall thermostat switch position. Manual type reset of cutout at unit will not be allowed.

e. Manufacturer shall guarantee unit to start and operate at 40° F ambient with specified flow and 80° F E.W.T.

f. A control panel shall be factory mounted within unit enclosure, containing all relays and 24 V transformer.

g. Thermostat and subbase for wall mounting shall be as detailed on plans and shall be furnished by conditioner manufacturer. Automatic changeover, needing four(4) field installed low voltage wires.

h. Conditioner blower shall be direct drive (no belts), centrifugal type, designed to produce specified air volume (CFM) at specified external static pressure at the input voltage specified. Blower motor speed for all models shall not exceed 1200 RPM synchronous speed. Motor shall have a normal two year lubrication capacity and shall be initially lubricated at the factory. Externally accessible oiler tubes shall be factory installed and motor shall be lubricated once a year as part of normal maintenance.

i. Conditioner shall be provided with one inch thick cleanable type air filters installed in a four-sided slide-in channel at the air inlet. Contractor shall remove one side in field to accommodate the direction of the most accessible filter pull. Piping and electrical connections shall be so located to eliminate interference with removal and replacement of filter.

j. Supply and return connections shall be 3/4"FPT copper fittings brazed to exchanger copper water tubes. The connection sub-assembly shall be mechanically fastened to the unit for rigidity. Manufacturer shall furnish a pair of 3/4" hose kits consisting of adapters to fit unit coil connections, suitable fittings and 24" length of Parker-Hannifin "Push-Lok" flexible hose, including swivel nut and male pipe by hose fittings, necessary couplings. Contractor shall furnish 3/4" bronze shut-off plug valves as manufactured by Crane Cat.#2180 or Kennedy Fig. 300 to complete the conditioner piping.

k. The loop water piping system shall be installed to provide a self-balancing two-pipe reverse return arrangement. Condensate drain piping shall not be less than 3/4" PVC, Schedule 40.
Provide city water make-up, expansion tank, air separator, installed in accordance with local codes and accepted practice.

l. It is <u>essential</u> that the finished piping system be thoroughly flushed free of foreign material and construction debris. Install a strainer in system line at pump suction. Flush system <u>prior</u> to final connection to any conditioner by means of loop bypass between supply and return at each unit location. The hoses for final unit connection should first be used for the loop bypass.

m. Conditioners shall be furnished for the specified voltage and phase shown on the plans, and shall be guaranteed for operation at plus or minus ten percent of rated voltage.

n. A one-year warranty shall be provided by Contractor for furnishing labor to replace any part of the unit which may become defective in normal operation from the date of first operation. Parts shall be covered by manufacturer's standard first-year warranty. In addition, the entire hermetically sealed motor compressor assembly and all components of the refrigeratin circuit not readily separable therefrom, shall be warranted to the Owner for five(5) years. Repairs under this warranty shall be made at manufacturer's expense, provided that the conditioner is delivered to and picked up from the authorized repair station.

26. HEAT REJECTOR (EVAPORATIVE COOLER)

a. Contractor shall furnish and install a factory assembled (two sections) closed circuit heat rejector (evaporative cooler) of sectional counter-flow blow-thru design as furnished by The Singer Company, manufacturer of the closed water circuit heat pumps.

b. The evaporative cooler shall have centrifugal blower assemblies built into the pan, with all moving parts factory mounted and aligned. The cooler shall be internall baffled. Unit construction shall be all hot-dip galvanized steel and additionally protected with Zinc Chromatized Aluminum finish after assembly. The comb-ination pan-fan section shall consist of heavy gauge hot-dip galvanized steel angle framework, hot-dipped galvanized V-shaped self cleaning pan and centrifugal fans mounted beneath the sloping undersides of the pan.

c. The cooler shall have the capacity to cool the circulating loop water as required, with a 95/78° F outside design.

d. Cooler shall be furnished with drip-proof ball-bearing fan motor and V-belt drive suitable for outdoor service. Motor shall be HP, 208/3/60.

e. Cooler shall be furnished with a spray water recirculating pump and motor, completely piped, with HP, 208/3/60 motor.

f. Cooler shall be furnished with a sump water heater of KW, 208/1/60, capacity to maintain sump water at approximately 40° F at the winter design dry bulb temperature with spray water pump and fans turned off.

g. The sump heater shall be complete with outdoor thermostat, sensing bulb, probe and level switch to prevent heater operation unless element is fully submerged.

h. Contractor shall insulate all outdoor condenser water piping, make-up water piping, drains, spray water piping, and spray pump casing. Provide electric heat tape under the insulation of the spray water piping, make-up water piping, and spray pump casing.

27. SUPPLEMENTAL ELECTRIC BOILER

a. Provide package type electric hot water boiler, Model No. , as furnished by The Singer Company, sized for KW at 208/3/60 voltage. The pressure vessel and integral electric panels shall be mounted on a unitary steel frame with proper supports, insulated and enclosed in a metal jacket.

b. The pressure vessel shall be of all welded steel construction, designed for a working pressure of 160 PSI in accordance with the ASME Boiler & Pressure Vessel Code and stamped with the appropriate ASME symbol.

c. A temperature actuated modulating step controller shall be provided with six(6) steps of heat. A high temperature limit control and reversing relay shall be provided. All control circuits shall be 120/1/60 to be supplied by a factory installed step-down transformer of the proper size. An indicator light shall be provided for each step of the step-controller. Unit shall have a panel mounted dial type thermometer, a panel mounted pressure gauge, and a ASME safety relief valve.

d. The entire unit shall bear the U.L. label. All work performed at the factory and on the job site shall comply with the National Electrical Code and all other local codes. The main busing at the panel shall be equipped with lugs of proper size for the incoming feeder cables. Fuses shall be Class "J" (silver link-sand filled type). Fuses shall be provided so that both sides of the line are fused.

e. The boiler shall be equipped with immersion type heating elements mounted in standard 150 lb. A.N.S.I. flanges. Each element shall be mechanically mounted and field replaceable without welding or brazing. Unit shall be preassembled, prewired and tested at the factory.

28. CLEANING AND FLUSHING

a. Circulation Start-Up Before Cleaning & Flushing:

(1) Before the piping system is complete, Contractor shall connect supply and return run-outs together at each heat pump location. This connection shall be made by coupling the two rubber hoses together.

(2) System shall be filled at city water make-up connection, with all air vents open. After filling, vents shall be closed.

(3) Start main system water circulating pump, with pressure reducing valve make-up open. Vents shall be checked in sequence to bleed off any trapped air in order to assure circulation through all of the components of system.

(4) Contractor shall energize supplemental heat source (electric boiler) and set control to 90° F loop temperature. Power must be off to all heat pumps and cooling tower motors.

b. Cleaning & Flushing the Water Circulating System:

(1) Extreme care shall be exercised by Contractor to prevent dirt and other foreign matter from entering pipe or components of system during construction. Before erection, each piece of pipe, fitting. or valve shall be visually examined and all dirt remove

(2) With system filled, circulation established, trapped air vented and electric boiler turned on, then check water thermometers installed at key points of system to determine that loop water temperature is approximately 90° F. Any leaks in piping shall be repaired before proceeding. Drain at lowest point in equipment room shall be opened for initial flush and blowdown, making sure city water fill valves are set to make up water at same rate. Check pressure gauge at pump suction and manually adjust make-up to hold same steady positive pressure before and after opening drain valve. In no case shall flushing period be less than two hours.

(3) The electric boiler and system circulating pump shall then be shut off. All drains and vents shall opened to completely drain down the system. The close-coupled supply and return connections at each heat pump shall now be reconnected permanently to respective inlets and outlets on each machine.

(4) Each condensate connection shall also be made up, making sure there is a steady pitch away from unit. When connecting hoses, a commercial brand of Teflon tape pipe thread sealer shall be used to minimize fouling of the tubes.

(5) System shall be refilled for operation under normal closed loop conditions. Contractor shall add trisodium phosphate in an aqueous solution to system, prepared in proportion of one(1) pound per every fifty(50) gallons of water in the system. After system is filled with this solution, the pump should be started, trapped air vented, drains closed, and the electric boiler temporarily set at 100° F. Solution shall circulate for approximatel three(3) hours.

(6) System shall then be drained completely and refilled with fresh water. The electric boiler operating control shall then be reset to 70° F at this point and the high limit control reset to 105° F.

(7) At no time shall the contractor add any water treatment chemicals or "stop-leak" compounds to the system water.

29. CHECK OUT AND START-UP PROCEDURE

a. Contractor shall refer to Singer Company Bulletin ECC-176 (pages 24 & 25) to initiate the check-out and start-up procedure.

VI. ELECTRICAL

Electrical Work:

General: See general conditions which are a part of this section.

Drawings: Drawings are diagrammatic and show generally the location of lighting, raceways, wiring, switches and accessories. All hardware, fittings and hangers are not indicated. See other drawings and conditions at site, and arrange work accordingly; furnishing required fittings and hardware without extra charge. Specifications and drawings are complementary, and what is called for by either shall be as binding as if called for by both.

Applicable Specifications and Codes: Installation shall conform to 1971 Edition of National Code (NEC). Where requirements of these specifications and drawings exceed the NEC, conform to these specifications and drawings.

Scope: Provide all labor, equipment, material and operations required for complete, safe, and operating electrical system as indicated on drawings; generally to include:

(a) Electrical service entrance

(b) Grounding of electrical system and equipment

(c) Distribution system for lighting and power, including distribution panel, feeders, circuit panels, branch circuits, receptacles and connections to outlets and devices for power utilization.

(d) Service entrance and empty conduits as indicated for telephone system, including 3/4", 8' x 8' backboards

(e) Power supply connections for mechanical equipment

Shop Drawings: Submit for following:

(a) Panels

(b) Lighting fixtures*

(c) Wiring devices*

* If as specified, submittals not required if letter so stating is furnished.

Guarantee: All work, material and apparatus to be guaranteed for one year from date of acceptance, except lamps.

Materials: All materials to be new clean, in good condition and shall meet applicable standards of Underwriters' Laboratories.

Grounding: Main service grounding to be to cold water pipe and to three 3/4" x 8' ground rods, driven six feet apart outside of building. Install bonding jumpers between all panelboards and feeder raceways connected thereto and across pull boxes in feeder raceways. Provide other grounding as required by NEC.

Raceways: All wiring to be in metallic raceways, using rigid steel conduit for exposed, below grade, in concrete, masonry and wet locations. Thinwall (EMT) conduit may be used elsewhere. All conduits to be galvanized.

Raceways to be secured in place by means of straps or clamps designed for the purpose. Thinwall (EMT) conduit couplings and fittings shall be threaded compression type. Flexible metal conduit shall be used in short lengths, for connecting machinery and fluorescent lighting fixtures. Liquid tight flexible conduit (Sealtite) shall be used for out-of-doors connections.

Conductors: Conductors shall be soft drawn copper, type THW insulation. Branch circuit conductors to be color coded. Join conductors with approved connectors. Wire nuts shall not be used except to connect lighting fixture leads. Conductors shall not be installed in raceways until completion of masonry, concrete and plastering work.

Service, Electrical: System to be 277/480 volts, three phase, 4 wire. Metering to be by Georgia Power Company.

Panels: Provide circuit breaker type, panelboards, factory assembled and equal to General Electric NLAB, for three phase, 4 wire, 120/208 volts, NAB for three phase, 4 wire 277/480 volts. CCB for main distribution panel - 277/480 volts. See Panel Schedule for sizes.

Outlets: Each outlet in the system shall be provided with a metallic outlet box of proper design and size for conditions invloved. Any outlet may be moved as much as ten feet before installation without incurring additional cost to the Owner.

Devices and Plates: Provide devices and plates as indicated on drawings. Device plates shall be oversized stainless steel, unless otherwise indicated.

Lighting Fixtures: Provide lighting fixtures of type and size indicated on drawings, with lamps installed in each fixture.

Permit Fees: Required electrical permit fees shall be included.

Transformers: Transformers to be General Electric or Westinghouse 480 volts to 120/208 volts, with 4 taps 15kva and below, 6 taps above 15kva. See Riser diagram for sizes.

Allowances: The following allowances are to be included to provide items which are yet to be finalized and selected by Owner:

(a) Floor box & floor duct fittings - $250.00

(b) Two lighting fixtures, designated OC - $500.00

Basis of allowances to be contractor's cost, and any unused portion to be returned to owner.

Briefness of Specifications: These specifications have been kept as brief as possible. The plans and specifications are designed to produce a lock - and - key job with good workmanship and the best of materials. If any item necessary is omitted but needed for a complete job, then it is to be installed by the contractor.

PANEL SCHEDULE

Panel

MDP — 800 Ampere Main Breaker, 3 phase, 4 wire, 277/480 Volts - Surface

with/ 1-225 Amp. 3 pole Breaker - Panel HB
1-200 Amp. 3 " " " -Boiler
1-150 Amp. 3 " " " - Panel HA
1-100 Amp. 3 " " " - Panel HC
1- 70 Amp. 3 " " " - 45 KVA transformer-Panel LB
1- 50 Amp. 3 " " " - 30 KVA transformer-Panel LA
2-100 Amp. 3 " Spaces

HA 225 Ampere MLO, 3 phase, 4 wire, 277/480 Volts, Surface
with/ 36- 20 Amp. 1 pole Breakers
6- 20 Amp. 1 " Spaces

HB 225 Ampere MLO, 3 phase, 4 wire, 277/480 Volts, Surface
with/ 24- 20 Amp. 1 pole Breakers
18- 20 Amp. 1 " Spaces

HC 225 Ampere MLO, 3 phase, 4 wire, 277/480 Volts, Surface
with/ 8- 20 Amp. 3 pole Breakers
18- 20 Amp. 1 " Spaces

LA 225 Ampere MLO, 3 phase, 4 wire, 120/208 Volts, Surface
with/ 12- 20 Amp. 1 pole Breakers
1- 50 Amp. 2 " " "
10- 20 Amp. 1 " Spaces

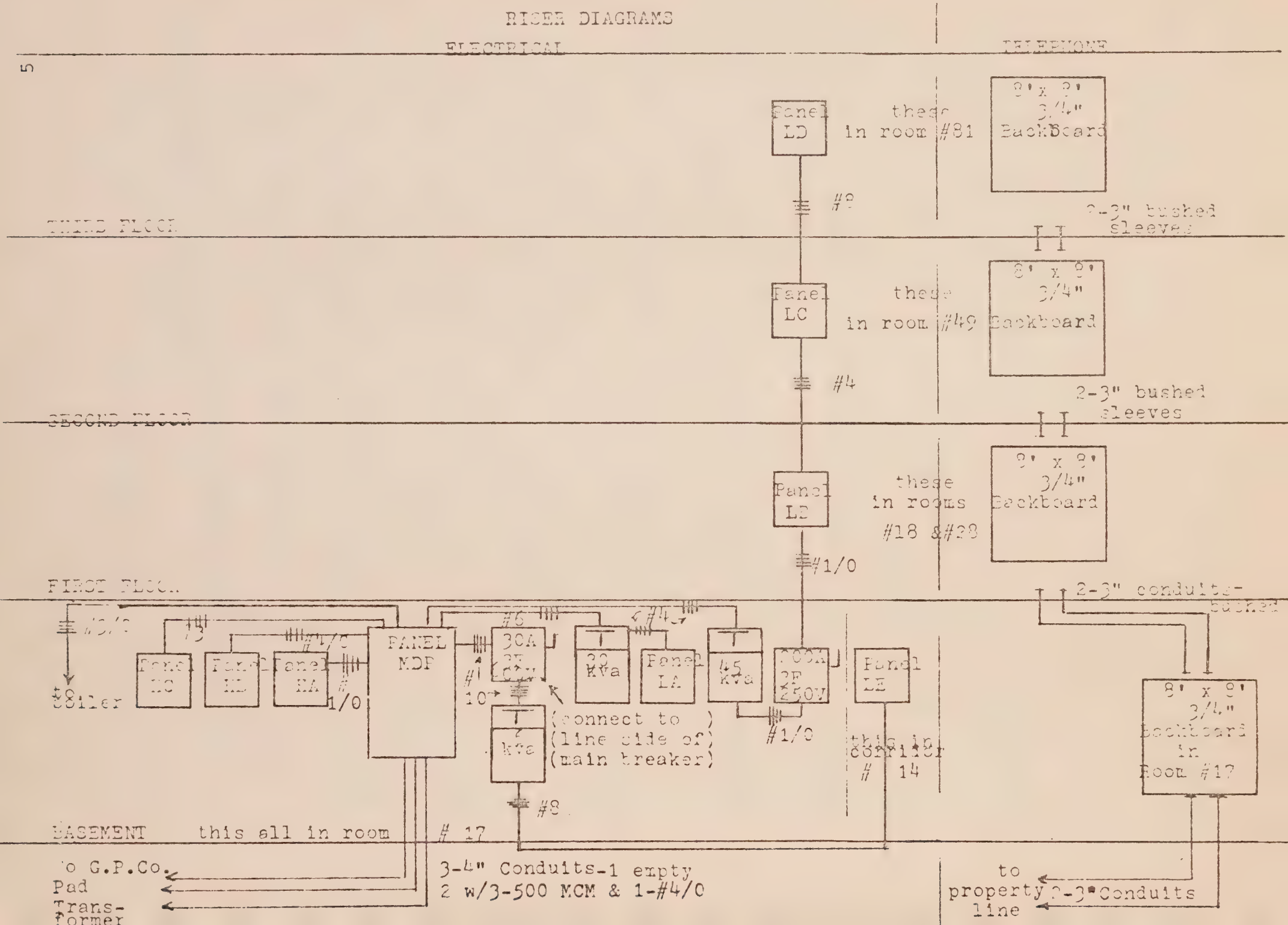
LB 225 Ampere MLO, 3 phase, 4 wire, 120/208 Volts, Flush
with/ 16- 20 Amp. 1 pole Breakers
1- 30 Amp. 2 " " "
1- 80 Amp. 3 " " "
9- 20 Amp. 1 " Spaces

LC 100 Ampere MLO, 3 phase, 4 wire, 120/208 Volts, Surface
with/ 16- 20 Amp. 1 pole Breakers
1- 40 Amp. 3 " " "
5- 20 Amp. 1 " Spaces

LD 100 Ampere MLO, 3 phase, 4 wire, 120/208 Volts, Surface
with/ 16- 20 Amp. 1 pole Breakers
8- 20 Amp. 1 " Spaces

LE 100 Ampere MLO, 3 phase, 4 wire, 120/208 Volts, Flush
with/ 8- 20 Amp. 1 pole Breakers
4- 20 Amp. 1 " Spaces

RISER DIAGRAMS



VII. P R O P O S A L

Submitted _____
(date)

TO: FORTSON, BENTLEY & GRIFFIN
ATHENS, GEORGIA

The undersigned, as Bidder, hereby declares that the only person or persons interested in the proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the specifications for the work and contract documents relative thereto; and that he has satisfied himself relative to the work to be performed.

The bidder proposes and agrees, if this proposal is accepted, to contract with Fortson, Bentley and Griffin, Attorneys, Athens, Georgia in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, and labor necessary to and to complete the works specified in the contract, and called for by the plans and specifications, in the manner specified and the time mentioned, according to the

requirements or hereinafter set forth, for the following prices to include all costs incidental to the work to which it applies, to wit: To build 3-story and basement office building for the sum of _____

Dollars. $_____

Alternate No. 1 - If alternate basement wall is used as shown on sheet 12, Deduct _____

Add _____

Net _____

in full and complete accordance with the shown, noted, described and reasonably intended requirements, specifications and contract documents, to the full and entire satisfaction of the Engineer and the Owner, with a definite understanding that no money will be allowed for extra work except as set forth in the attached General Conditions and Contract Documents. The bidder further proposes and agrees hereby to commence the work with an adequate force and equipment on a date to be specified in a written order from the Owner so to do, and to complete fully all work hereunder within _____ calendar days from and including said date.

The undersigned further agrees that, in case of failure on his part to execute the said Contract and Bond within ten (10) consecutive calendar days after written notice being given of the award of the Contract, the check or bid bond accompanying this bid,

and the monies payable thereon, shall be paid into the funds of Fortson, Bentley and Griffin, as liquidated damages for such failure; otherwise, the check or bid bond accompanying this proposal shall be returned to the undersigned.

Attached hereto is a certified check on the

_____Bank,

or a bid bond, for the sum of _____

_____Dollars $_____ made

payable to Fortson, Bentley and Griffin of Athens, Georgia.

_____ L. S.

_____ L. S.

_____ L. S.

Address:

_____

_____

VIII. BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

_____, as Principal, and

_____, as Surety,

are hereby held and firmly bound unto Fortson, Bentley & Griffin as Owner

in the penal sum of _____

_____

_____Dollars ($_____)

for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____day of _____, 1974.

The Condition of the above obligation is such that whereas the Principal has submitted to Fortson, Bentley & Griffin, a certain bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the complete work of_____

for the amount of _____

_____Dollars ($_____)

NOW, THEREFORE:

(a) If said Bid shall be rejected, or in the alternate,

(b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulated and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such

Bid; and said Surety does hereby waive notice of any extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their property officers, the day and year first set forth above.

_____(L.S.)
Principal

_____
Surety

By:_____

IMPORTANT: - Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

IX. CONSTRUCTION AGREEMENT

STATE OF GEORGIA

CLARKE COUNTY

THIS AGREEMENT, made and entered into on the _____ day of _____, 1974, by and between Fortson, Bentley & Griffin, party of the first part (hereinafter called the "Owner"), and _____ party of the second part (hereinafter called the "Contractor").

WITNESSETH:

That the Contractor, for the consideration hereinafter fully set out, hereby agrees with the Owner as follows:

1. That the Contractor will furnish all equipment, tools, materials, skill, and labor of every description necessary to carry out and complete in a good, firm, substantial and workmanlike manner, the work specified, in strict conformity with the drawings and the Specifications hereinafter set forth, which drawings and specifications, together with the Proposal made by the Contractor, the Advertisement for Bids, Instructions to Bidders and Special Provisions, General Conditions, this Agreement, Performance and Payment Bonds, and all Addenda annexed hereto, shall form essential parts of this Agreement, as if fully contained herein. The work covered by this Agreement includes all work as shown on the drawings, specified and listed in the attached Proposal.

2. That the Contractor shall commence the work to be performed under this Agreement on a date to be specified in a written order of the Owner's Engineer and shall fully complete all work hereunder within _____ consecutive calendar days from said date, except as otherwise provided in these documents for extensions of the above time limit. Time is of the essence of this contract and the Contractor shall pay to the Owner, not as a penalty, but as liquidated damages the sum of fifty ($50.00) dollars for each calendar day that he shall be in default of completing the work within the time limit named herein. Because of the difficulty of fixing damages suffered by the Owner on account of such default, damages are herein agreed upon as stated.

3. The Owner hereby agrees to pay to the Contractor for the faithful performance of this Agreement, subject to additions and deductions as provided in the Specifications or Proposal, in lawful money of the United States, the sum of _____

_____ Dollars ($_____).

4. No later than the 15th day of each calendar month, as the work progresses, the Owner shall make partial payments to the Contractor on the value of labor and materials incorporated into the work and of materials on hand at the site of the work, except cement and materials subject to deterioration, for, and including the last day of the preceding month, less payments already made and less deductions for any unaccepted or defective work.

5. Upon submission by the Contractor of evidence satisfactory to the Owner that all payrolls, material bills and other costs incurred by the Contractor in connection with the construction of the work have been paid in full, final payment on account of this Agreement shall be made within thirty (30) days after the completion by the Contractor of all work covered by this Agreement and the acceptance of such work by the Owner.

6. It is further mutually agreed between the parties hereto that if, at any time after the execution of this Agreement and the Surety and Payment Bonds hereto attached for its faithful performance, the Owner shall deem the Surety or Sureties upon such bonds to be unsatisfactory, or if, for any reason, such bond ceases to be adequate to cover performance of the work, the Contractor shall, at his expense, within five (5) days after the receipt of notice from the Owner to do so, furnish additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the Owner. In such event no further payment to the Contractor shall be deemed to be due under this Agreement until such new additional security for the faithful performance of the work shall be furnished in manner and form satisfactory to the Owner.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day, month and year first above written in six (6) counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original contract.

WITNESS: (As to Contractor)
Signed and Sealed in the Presence of:

_____

_____

ATTEST:

_____
Secretary
(SEAL)

*CONTRACTOR

_____

By:_____

Title:_____

ATTEST: (SEAL)

_____
Secretary

APPROVED AS TO FORM BEFORE EXECUTION
By:_____
Attorney for Fortson, Bentley & Griffin

FORTSON, BENTLEY & GRIFFIN

By:_____

By:_____

By:_____

NOTE: If the contractor is a corporation, the agreement shall be signed by the President or Vice President, attested by the Secretary and the corporate seal affixed. If the Contractor is a partnership, the agreement shall be signed in the partnership name by one of the partners, with indication that he is a general partner.

X. PERFORMANCE BOND

CLARKE COUNTY)
) ss:
STATE OF GEORGIA)

KNOW ALL MEN BY THESE PRESENTS, that we _____

_____, hereinafter known as

the "Contractor", as principal, and _____

_____, as surety, are held and firmly bound unto Fortson,Bentley & Griffin, hereinafter known as the "Owner" in the

penal sum of _____

_____ Dollars ($_____)
lawful money of the United States of America, to be paid to the Owner, for the use and benefit of the said obligee, and of all persons doing work or furnishing skill, tools, machinery or materials under or for the purposes of the contract hereinafter named, for which payment, well and truly to be made, we bind ourselves, our successors and our several respective heirs, assigns, executors, and administrators, jointly and severally, firmly by these presents.

SEALED WITH OUR SEALS AND DATED THIS THE _____DAY OF _____, 1974.

WHEREAS, the above bounden _____

_____ by an instrument in writing, bearing even date, with these presents, has contracted with the Owner to furnish all equipment, tools, materials, skill and labor for the completion of the work covered by the following items of the attached Proposal for _____

_____

_____
All work to be performed in strict accordance with the attached Agreement or Contract and Specifications, which Contract is by reference made a part hereof:

NOW, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said _____

_____ _____
shall complete the work provided for in said Contract according to terms, and shall save the obligee hereunder free from all costs and charges that may accrue on account of the doing of the work specified in the contract, and shall comply with the laws appertaining to said Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

AND THE FURTHER CONDITION OF THIS OBLIGATION IS SUCH THAT IF _____

_____, as Contractor, shall fully and faithfully perform the work in accordance with the terms of the

annexed contract therefor and the plans and specifications therein referred to, and provide the materials therein called for, and replace defective work or material for a period of one year after the completion of this contract, then this obligation shall be null and void; otherwise, they,_____

_____, as Contractor and

_____, as Surety, jointly and severally agree to pay the Owner the difference between the sum to which the said _____, as Contractor, would be entitled in the completion of the Contract, and that which the Owner may be obliged to pay for the completion of the work by Contract or otherwise, and agree to pay any damage, direct or indirect or consequential, which said Owner may sustain on account of such work or on account of the failure of said Contractor properly and in all things to keep and execute the provisions of the Contract.

And the said _____

as Contractor, and _____
as Surety, hereby further bind themselves, their successors, assigns, heirs, executors and administrators, jointly and severally, that they will indemnify and save harmless and will pay all amounts, damages, costs and judgments which may be recovered against, and all expenses incurred by, the Owner and all representatives of said Owner from or arising out of all or any suits, actions, or claims of any character brought on account of any injuries or damages sustained by any person or property in consequence of any neglect in safeguarding the work, or any such suit or claim arising from any other act, omission, negligence or misconduct of the Contractor, his agents, representatives, servants and employees in the performance of said work or of the repair or maintenance thereof, or the manner of doing the same, or the neglect of said Contractor, or agents or servants, or the improper performance of the said work by the Contractor or agents or servants, or the infringement of any patent rights by reason of the use of any equipment or materials furnished under the said Contract, and will also pay any damages for delay in performance within the time agreed, as stated in the Contract; further, failure so to do with such persons, firms, partnerships or corporation shall give them a direct right of action against the principal and surety under this obligation.

As the said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder, or the specifications accompanying the same, shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

Without limiting the effect of any other provisions herein contained, this Bond is to be construed as a statutory bond under the provisions of Section 23-1705 of the 1933 Code of Georgia as amended to date.

IN WITNESS WHEREOF, the said _____ _____

has caused _____corporate seal to be hereto affixed, and these presents

to be signed in its name by _____

and the said _____

as Surety, has caused _____ corporate seal to be hereto affixed and these

presents to be signed in its name by _____

(As to Contractor)

*CONTRACTOR (SEAL)

Signed, sealed and delivered
in the presence of:

_____

_____

_____

By: _____
(Name) (Title)

ATTEST:

_____
Secretary

(As to Surety)

Signed, sealed and delivered in
the presence of:

_____

_____

SURETY (SEAL)

_____

By: _____
Attorney in Fact

COUNTERSIGNED:

By: _____
Resident Agent
(Resident of Clarke County)

APPROVED AS TO FORM:

_____
Attorney for Fortson,
Bentley & Griffin

*NOTE: If the Principal is a corporation, the bond shall be signed by the President or Vice President, attested by the Secretary and the corporate seal affixed. If the Principal is a partnership, the bond shall be signed in the partnership name by one of the partners, with indication that he is a general partner.

Bond Approved_____ _____

XI. PAYMENT BOND

CLARKE COUNTY

ATHENS, GEORGIA

KNOW ALL MEN BY THESE PRESENTS, that we

_____,

hereinafter known as the "Contractor", as principal, and

_____,

as Surety, are held and firmly bound unto Fortson, Bentley & Griffin of Athens, Georgia, hereinafter known as the "Owner", in the penal sum of _____

_____Dollars $_____
lawful money of the United States of America, to be paid to the Owner, for the use and benefit of the said obligee, and all persons doing work or furnishing skill, tools, machinery or materials under or for the purpose of the contract hereinafter named, for which payment, well and truly to be made, we bind ourselves, our successors and our several respective heirs, assigns, executors, and administrators, jointly and severally, firmly by these presents.

SEALED WITH OUR SEALS AND DATED THIS THE _____DAY

OF _____, 1974.

WHEREAS, the above bounden _____

_____ by an instrument in writing, bearing even date, with these presents, has contracted with the Owner to furnish all equipment, tools, materials, skill and labor for the completion of the work covered by the following items of the attached Proposal for _____

_____

All work to be performed in strict accordance with the attached agreement or contract and specifications, which contract is by reference made a part hereof:

NOW, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said _____ and all subcontractors to whom any portion of the work provided for in the attached agreement or contract is sublet and all assignees of the said _____ and of such subcontractors shall promptly make payments to all persons supplying him or them with labor, material, or supplies for or in the prosecution of the work provided for in such contract, or in any amendment or extension of or addition to said contract, and for the payment of reasonable attorneys' fees, incurred by the claimant or claimants in suits on said bond, then the above obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, however, that this bond is subject to the following conditions and limitations:

(a) Any person, firm or corporation that has furnished labor, materials, or supplies for or in the prosecution of the work provided for in said contract shall have a direct right of action against the contractor and surety on this bond, which right of action shall be asserted in a proceeding, instituted in the county in which the work provided for in said contract is to be performed or in any county in which said contractor or surety does business. Such right of action shall be asserted in a proceeding instituted in the name of the claimant or claimants for his or their use and benefit against said contractor and surety or either of them (but not later than one year after the final settlement of said contract) in which action such claim or claims shall be adjudicated and judgment rendered thereon.

(b) The Principal and Surety hereby designate and appoint John E. Griffin as the agent of each of them to receive and accept service of process or other pleading issued or filed in any proceeding instituted on this bond and hereby consent that such service shall be the same as personal service on the contractor and/or surety.

(c) In no event shall the surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than one year after the final settlement of said contract.

(d) This bond is given pursuant to the terms of Section

23-1705 of the 1933 Code of Georgia as amended as all the provisions of law with reference to this character of bond as set forth in said section or as may hereinafter be enacted are hereby made a part hereof to the same extent as if set out herein in full.

IN WITNESS WHEREOF, the said _____

has caused _____ corporate seal to be hereto affixed, and

these presents to be signed in its name by _____

and the said _____

as Surety, has caused _____ corporate seal to be hereto

affixed and these presents to be signed in its name by

_____

(As to contractor) _____ (SEAL)
Signed, sealed and *CONTRACTOR
delivered in presence of:

By:_____
(name) (title)

_____

_____

(As to Surety) ATTEST: _____
Signed, sealed and delivered Secretary
in the presence of: SURETY:

_____ _____

_____ By:_____
Attorney in Fact

APPROVED AS TO FORM: COUNTERSIGNED:

_____ By:_____
Attorney for Fortson, Bentley Resident Agent
& Griffin (Resident of Clarke County)

*NOTE: If the Principal is a corporation, the bond shall be signed by the President or Vice-President, attested by the Secretary and the corporate seal affixed. If the Principal is a partnership, the bond shall be signed in the partnership name by one of the partners, with indication that he is a general partner.